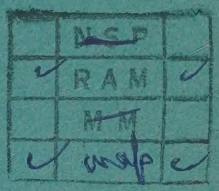
COLONY OF MAURITIUS

Annual Report

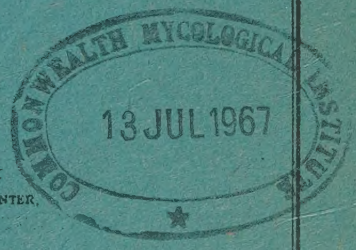
OF THE

Department of Agriculture

for the year 1965



[PRICE: Rs 4.00]



PRINTED AND PUBLISHED BY
J. ELIEL FÉLIX, I.S.O., GOVERNMENT PRINTER,
PORT LOUIS, MAURITIUS
FEBRUARY 1967

No. 3 of 1967

COLONY OF MAURITIUS

Annual Report

OF THE

Department of Agriculture

for the year 1965

PRINTED AND PUBLISHED BY
J. ELIEL FÉLIX, I.S.O., GOVERNMENT PRINTER,
PORT LOUIS, MAURITIUS
FEBRUARY 1967

Department of Agriculture,
Réduit,
14th June, 1966.

Sir,

I have the honour to submit the Annual Report of the Department of Agriculture for the year 1965.

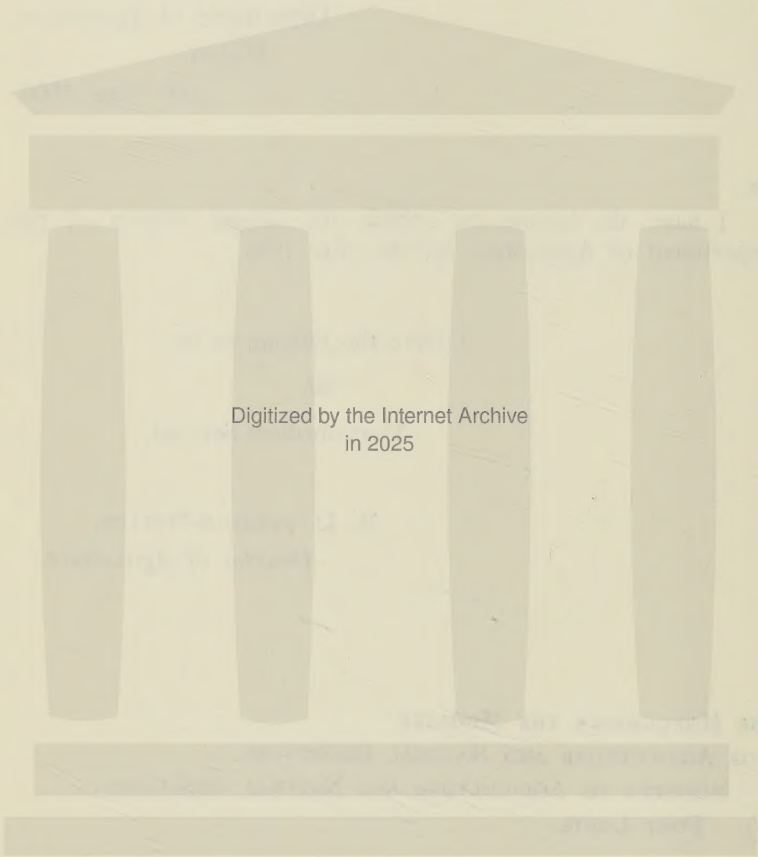
I have the honour to be,

Sir,

Your obedient Servant,

M. D. FFRENCH-MULLEN,
Director of Agriculture.

THE HONOURABLE THE MINISTER
OF AGRICULTURE AND NATURAL RESOURCES,
MINISTRY OF AGRICULTURE AND NATURAL RESOURCES,
PORT LOUIS.



Digitized by the Internet Archive
in 2025

https://archive.org/details/annual-report-ministry-of-agriculture-food-technology-za_1965

Table of Contents

		PAGE
I.	General Review	1
II.	Boards and Committees	27
III.	Board of Agriculture, Fisheries and Natural Resources	27
IV.	Mauritius Chamber of Agriculture	28
V.	Comité de Collaboration Agricole Maurice—Réunion —Madagasikara	29
VI.	College of Agriculture	29
VII.	Arbitration and Control Board	31
VIII.	Sugar Industry	33
IX.	Tea Industry	35
X.	Tobacco Industry	44
XI.	Fibre Industry	47
XII.	Livestock	49
XIII.	Animal Health	53
XIV.	Land Settlement	59
XV.	Extension Services	60
XVI.	Foodcrops	66
XVII.	Experiment Stations	67
XVIII.	Plant Pathology	91
XIX.	Entomology	98
XX.	Agricultural Chemistry	104
XXI.	Engineering Division	106
XXII.	Fisheries	107
XXIII.	Rodrigues	115
XXIV.	Lesser Dependencies	122
XXV.	Land and Water Resources Survey	122

APPENDICES

A.	Staff	123
B.	Composition of Principal Boards and Committees	128
C.	Legislation	131
D.	Publications	132
E.	Statement of Revenue and Expenditure of the Livestock Feed Factory for the year ended 30. 6.65	133
F.	Conversion Table	134

Annual Report of the Department of Agriculture for the year 1965

I. General Review

During 1965, there was no important change in the policy of the Department which continued to centre round the maximum utilisation of the land and water resources of Mauritius and its dependencies. With a view to increasing the limited amount of water available for irrigation as well as increasing the efficiency of land utilisation, the United Nations Special Fund approved funds for the carrying out of a land and water resources survey of Mauritius by the Food and Agricultural Organisation during 1964. This project became operational on the 4th of January. Owing to the limited resources of land suitable for agriculture, the majority of which is already under cultivation, emphasis was placed on increasing the productivity of land under cultivation as well as on the utilisation of relatively small plots of undeveloped land. Development of the livestock industry received considerable attention, particularly the production and marketing of milk, meat and poultry. The Agricultural Marketing Board, set up in May 1964, continued to be concerned with the marketing of locally produced potatoes and onions both in Mauritius and Rodrigues and, in December, became concerned with the marketing of milk.

2. In general, weather conditions were favourable to agriculture and to production. The only tropical depression affecting Mauritius in May was cyclone *Rose* which passed by the island but did not cause any noticeable damage to production as wind gusts did not exceed 60 miles per hour. During the growing season, climatic conditions were generally favourable to vegetative growth and the latter half of the year was characterised by abnormal rainfall and temperatures which, although generally favourable to foodcrop production, were less favourable to tea and unfavourable to sugar production. As a result of abnormal rainfall during the maturation period of the sugar-cane crop, a record metric tonnage of sugar-cane was harvested, namely 5,984,489 compared with 4,375,014 metric tons harvested in 1964. The production of sugar was disappointing and amounted to 664,402 metric tons compared with 591,900 in 1964 and 685,500 in 1963. Low temperatures over the period June - September and again in November to some extent adversely affected tea production, although, in general, the weather was favourable throughout the year. 3,829,348 lbs of tea were produced, an increase of 758,815 lbs over the 1964 production and 572,457 lbs higher than the previous best year, namely 1963. The price of Mauritian tea on the London market showed a substantial improvement over the previous year, the average price received being 3s.8.32d per lb compared with 3s.5.35d per lb. Weather conditions were variable for tobacco. High atmospheric humidity at harvest resulted in increasing yield, with a lowering of quality, in Amarello air-cured tobacco. Cold weather conditions during the growing period for Virginian flue-cured tobacco, affected yields, although

the quality of the tobacco was slightly better than in 1964, resulting in a lower average return per arpent. The quality of Burley tobacco produced was adversely affected by high humidity at curing. Foodcrop and vegetable production was generally higher than in the previous year, there being major increases in the production of maize, groundnuts, beans and peas, vegetables and bananas. There was an appreciable decrease in the production of arouilles, Irish potatoes and pineapples. The estimated total production of foodcrops rose from 31,171 metric tons in 1964 to 42,722 tons in 1965, some 7,000 tons of this increase being attributable to bananas. The importation of herd cattle from Madagasikara for slaughter was similar to the previous year, 7,141 animals being imported compared with 7,282 in 1964, although 7,302 animals were slaughtered, the difference being accounted for by carry over from the previous year. In addition, 632 cattle were imported from Rodrigues for slaughter and 2,579 local cows were slaughtered, compared with 2,973 in 1964 as well as 4,901 local cattle. 1,446 goats were imported from Madagasikara for slaughter as well as 2,808 from Rodrigues and 105 from Australia. 1,399 sheep were imported for slaughter from Rodrigues together with 3,345 from Australia. There was an increase in egg and poultry meat production but local production still fell short of requirements. During the year, several projects were commenced with the assistance of the Development Bank for the large-scale production of eggs and poultry meat.

3. The Department was organised into 13 divisions, staffed by 326 officers, including a Director and two Deputy Directors who plan and carry out the experimental, development and extension work of the organisation. At the close of the year, there were 35 vacancies. 24 part-time lecturers were employed by the College of Agriculture. Assistance was received from the Food and Agricultural Organisation of the United Nations who provided a Rural Institution Officer to assist in the in-service training of extension staff as well as an associate home economist in connection with the FAO/UNICEF/WHO project on agricultural extension training in conjunction with the development of home economics and nutrition education. The Canadian Government also generously made available the services of a Fisheries Adviser to assist in the development of the fisheries of Mauritius and its dependencies.

4. The work of the Department is broadly divided into:

(a) applied research and development, to study and develop crop and livestock in the various environmental conditions obtaining in Mauritius;

(b) extension, to advise and assist farmers with a view to their obtaining the maximum productivity and economic return from their farms.

5. The development of agricultural industries, other than sugar, and the provision of extension services to both small sugar-cane planters and others, as well as livestock producers, continued to be the main concern of the Department. Encouragement and assistance were given in the production

of tea, tobacco, pasture and forage crops, orchard crops particularly citrus and coconut, foodcrops and vegetables, livestock and livestock products. The 'Produce More Food' campaign was extended to a further five villages and the ad hoc committee set up by the Honourable Minister of Agriculture and Natural Resources to encourage the production of foodcrops on sugar-cane fallows and sugar-cane interlines met on five occasions with a view to increasing the production of potatoes, maize, groundnuts and vegetables.

6. The majority of the technical officers in the Department received their initial training in agriculture at the College of Agriculture. Professional specialist staff completed their training overseas. The College also provides technical staff to the sugar industry, other agricultural industries and the Mauritius Sugar Industry Research Institute. The College continued to offer two 3-year courses leading to diplomas in Agriculture and Sugar Technology. 91 candidates applied for admission to the diploma course, 62 sat for the entrance examinations and a record number of 27 were admitted: 18 to the Agriculture course and 9 to the Sugar Technology. During the year, there were 98 students in residence of whom 57 were taking the diploma course, six a 1-year course in Tropical Agriculture and 32 part-time certificate courses in sugar-cane cultivation and sugar-cane analysis. Five students were awarded the Diploma in Agriculture and 9 were awarded the Diploma in Sugar Technology. Two students were awarded the Honours Diploma in Agriculture and one in Sugar Technology. Two laureateships were awarded. Under the auspices of the 'Comité de Collaboration Agricole Maurice — Réunion—Madagasikara' a party of six third-year students, accompanied by two members of the staff, visited Réunion and Madagasikara in September and a return visit to Mauritius was made by Réunion students and staff in July. In May, the third-year agricultural diplomate students spent five days in Rodrigues observing the land rehabilitation and development work being carried out by the Department in that dependency. During the year, the University of Mauritius project was initiated by the passing of an ordinance and the setting up of a provisional University Council.

7. The Department continued to maintain the essential services which it provides for the sugar industry, namely the Sugar Millers and Planters Central Arbitration and Control Board, which regulates the sale and purchase of sugar-cane as well as the extension services to small sugar-cane farmers below 100 arpents. Some 25,385 tests were carried out by the Control Board on planters and miller/planters sugar-cane. Ten protests were received in respect of the final assessment of sugar for the 1964 crop; of these seven withdrew their protests and the remainder was settled, although in no case was the assessment varied. Cost of production questionnaires were issued to 50 planters and the 23 sugar estates with factories and a schedule of rates of transport costs for sugar-cane was issued. Five applications for alterations in the delimitation of factory areas were received; all were either rejected or not entertained. Permits were issued to 46 middlemen; 37 complaints were received and settled. With the coming into force of the Sale of Canes (Control) Ordinance, 1964, all middlemen were compelled to keep records of their transactions with planters on a standard form approved by the Board. 17,961 cane contracts were registered; 19,975 cane contracts

were in force covering some 26,000 planters. The number of planters who failed to enter into contract before the 31st of May rose to 1,101 compared with 148 in 1964. Five cases of breach of the Sale of Canes (Control) Ordinance were reported. 116 weighbridges were in operation, a reduction of 2 compared with the previous year. Regular checks of weighbridges were made both prior to and during the crop as well as 617 surprise checks, which were carried out during the crop, involving the re-weighing of 462 vehicles. In 3 cases weighing was found to be incorrect, resulting in the prosecution of 2 weighers and a warning being issued to the third.

8. The total acreage under sugar-cane was 207,000 arpents, of which 194,000 arpents were harvested, compared with 206,937 and 195,411 arpents respectively in 1964. 664,402 metric tons of sugar were produced compared with 519,900 metric tons in 1964 and 685,500 metric tons in 1963. 560,442 long tons of sugar were exported, of which 380,000 long tons were sold at the negotiated price of £46.11.6 per ton under the Commonwealth Sugar Agreement. The remaining 180,442 long tons were sold on the free market and 27,871 long tons were consumed locally. The United Kingdom was the largest customer taking 381,020 long tons followed by Canada taking 95,649 long tons and the Republic of South Africa 41,180 tons. Sugar was also sold to Malaysia, the United States of America and Hong Kong. The yield of sugar per arpent was 3.42 metric tons compared with 2.66 metric tons in 1964. Five sugar-cane varieties, namely M.147/44, M.93/48, E.1/37, M.202/46 and B.37172, accounted for about 72 per cent of the acreage under crop, the remaining percentage being made up by E.60/47, B.3337, M.143/32, M.31/35, M.253/48, M.442/51 and other varieties. 151,152 metric tons of molasses were produced, of which about 8,000 metric tons were utilised in the manufacture of rum and various alcoholic products. 105,360 metric tons of molasses were exported inclusive of 24,096 metric tons of molasses carried over from the 1964 crop. The balance was used as fertiliser. The total production of alcohol reduced to 100°G.L. was about 1,486,000 litres, of which 18,614 litres were exported.

9. The close liaison established between officers of the Department, particularly the extension services and those of the Mauritius Sugar Industry Research Institute was maintained. The field visits organised in connection with disease and pest control were of considerable value as were the series of lectures delivered by specialist officers of the Institute for the benefit of the staff of the extension services.

10. The Department continued to direct the activities of the three committees administering the Sugar Industry Rehabilitation Fund. The Sugar Planters Rehabilitation Fund continued to operate and manage the Mechanical Pool which is designed to clear and de-stone land planted under sugar-cane. The Fund operated the Pointe-aux-Sables Cane Nurseries as well as subsidiary nurseries laid down in factory areas for the production of disease-free planting material. The first year's results of the subsidiary cane nurseries in certain factory areas were disappointing in that small planters have not taken advantage of the planting material made available to them at the subsidiary nurseries.

11. The tea industry was controlled by the Tea Control Board which held regular meetings throughout the year. The Board was mainly concerned with the control of the weight and storage of made tea in factories, the allocation of quotas for the sale of tea on the local market, the re-licensing of the Mare Anguilles tea factory and the possibility of reducing freight charges on tea exports. The ' Drink More Tea ' campaign was continued with the co-operation of manufacturers. The activities of the Board were handicapped somewhat by a shortage of staff throughout the year. The compilation and issue of quarterly and annual statistical reviews were continued.

12. The La Chartreuse Tea Marketing Co-operative Society Ltd. continued to act as Government's managing agents in respect of Chartreuse tea factory but, in March, relinquished the control of Midlands tea estate. The extension of Chartreuse tea factory was completed and the rated capacity of the factory was raised from three-quarters of a million to one-and-a-half million pounds of made tea per crop year. Leaf production from Midlands tea estate was 954,979 lbs of green leaf, which was again lower than in the previous year. This decrease was partly due to a total strike of field labour in January, resulting in a cessation in plucking for 11 days at the peak of the harvest. In consequence, the whole estate had to be cut across and re-levelled and normal plucking rounds were not resumed for some months. Leaf production was also affected towards the end of the year by unseasonably cold weather and, to some extent, by interruptions in the plucking cycle occasioned by the distribution of the estate, after its subdivision, to smallholders towards the end of the year.

13. In addition to the extension of the Chartreuse tea factory, the Nouvelle France tea factory commenced a further extension to provide room for additional withering troughs, following the modernisation of this factory last year. The Bois Chéri tea factory installed a skip fermenting unit and extended its boiler house to provide additional power for drying and withering. The Mare Anguilles tea factory was purchased on the understanding that the factory would be modernised. This commenced with the construction of a withering house to be equipped with troughs, the installation of a triturator and C.T.C. machinery which should enable the factory to go into operation during 1966.

14. Of the 6,312 arpents planted to tea, an increase of 750 arpents over last year, approximately 2,836 arpents were over 10 years of age, 1,649 arpents between 3 and 9 years of age and 1,827 under 3 years of age. There were 476 tea gardens varying in average size from 1.6 to 257.5 arpents. Tea gardens of less than 5 arpents comprised 10.7 per cent of the total area under tea, 5-25 arpents, 4.4 per cent, 25 - 100 arpents, 15.6 per cent and above 100 arpents, 69.3 per cent. The largest tea garden under single management was just below 900 arpents and there were 68 tea gardens under one arpent. Six tea factories produced 3,829,348 lbs of black tea of which 2,434,605 lbs were exported, mainly to the United Kingdom, valued at Rs 5,857,881. The production of tea as well as exports were a record;

production exceeded that of the previous best year (1963) by 572,457 lbs of black tea and exports increased by 259,112 lbs similarly. Local consumption remained virtually stationary.

15. The Tea Development Project, which was commenced in 1956, was designed to develop 3,000 arpents of new land under tea. As a result of representations from the participating planters in 1963, the scheme was extended for a further 2 years, to June, 1965, owing to the setbacks suffered during the cyclones of 1960 and subsequent cyclones. By the end of the year, planters on private land had planted 212 arpents and those on Crown Land 1,854 arpents, Government having planted 289 arpents for distribution to smallholders. Of the 3,000 arpents to be planted under the scheme, a total of 2,355 arpents were planted. The undistributed remainder of the 289 arpents planted by Government for distribution to smallholders was sub-divided into holdings with an average gross area of 5 arpents (effective area under tea 4 arpents) and distributed to 33 farmers. In addition, the Midlands tea estate was sub-divided into 136 smallholdings and distributed to farmers towards the end of the year. Groups of smallholdings were leased initially as a block to co-operative societies who, in turn, will sub-lease to the individual tenants. This procedure was necessary to enable tenants to obtain short-term loans from the Co-operative Central Bank.

16. Work proceeded satisfactorily on the new Tea Development Project which presently envisages the establishment and planting of a minimum of 750 arpents of tea per annum by Government for distribution, when fully established, as smallholdings. At the end of the year, 2,449 arpents had been contour-surveyed, 2,149 arpents cleared, 1,616 arpents prepared for planting and 1,554 arpents planted, compared with 1,865 arpents contour-surveyed, 1,615 arpents cleared, 1,164 arpents prepared for planting and 836 arpents planted at the close of 1964. 47 arpents of the planted area were distributed as smallholdings.

17. The local tea seed gardens continued to be affected by the passage of cyclone *Daniele* in 1964 and only yielded 8,280 lbs of tea seed from a total area under seed gardens of 69 arpents, of which only 50 arpents were in bearing. The importation of seed continued and imports from Tanzania amounted to 37,000 lbs together with 23,000 from Malawi.

18. At the Wooton tea experiment station, a record harvest of 343,872 lbs of green leaf was obtained for the tea crop year 1964-65 compared with 239,700 lbs for the previous year. Yields in the first six months of the current tea crop year, namely the last 6 months of 1965, showed a slight increase compared with 1964. Work was continued on the vegetative propagation of selected clones and a rooting media suitable to conditions in Mauritius has been determined. Following the success of the first mist propagator, a second was constructed, together with a hardening-off shed. The results of the first 3-year cycle on a pruning experiment indicated that early pruning, in May, gives better results than late pruning, in August. Fertilizer experiments on yield of green leaf have indicated a positive response to nitrogen and a lack of response to phosphate. There have also been indications that nitrogen plus potash had a beneficial effect on yield. Young tea plants in nurseries showed a marked response to phosphate and

potash during the first six months of growth. Fertilizer trials with *Tephrosia*, used as windbreaks for young tea, have indicated that phosphate is essential for good growth. An assessment of the four main types of tea grown at Wooton indicated that the local jat (China hybrid type) gave the highest yield of green leaf as well as better quality of liquor but has a tendency to produce banjhi growth. The use of Simazine for weed control in nursery beds has proved of value. Storage trials on tea seeds have indicated that seeds can be kept at Wooton during the winter months for a period of 4 months, without refrigeration, without any marked drop in viability. The covering of seed beds with clear plastic speeds up germination.

19. The control of the tobacco industry continued to be vested in the Tobacco Board which not only purchased, processed and stored all leaf produced but provided an extension service to the industry. Research services were provided by the Department at the Richelieu and Pamplemousses experiment stations, which organisation is also responsible for the production of seed of all proven varieties. The seed stocks held by the Department were sufficient for two years' usings as an insurance against natural disasters. Weather conditions were favourable. Amarello air-cured tobacco was affected by high atmospheric humidity at harvest which resulted in increasing yield with a lowering of quality. Cold weather during the growing season affected flue-cured Virginian tobacco by lowering the yield, although the quality showed improvement on the previous year. As a result the average return per arpent of Amarello air-cured tobacco was slightly higher than in 1964, while the return on Virginian flue-cured tobacco was lower. The yield of Burley was similar to 1964 but quality was lower. The incidence of pests and diseases was generally slight; leaf-spot disease appeared towards the end of the crop and powdery mildew was severe in one area. An high incidence of Granville wilt was observed in a field which had grown tobacco two years running. Permits were issued for 813 arpents of Virginian flue-cured, 99 arpents of Amarello and 17 arpents of Burley compared with 386 arpents, 120 arpents and 14 arpents respectively in 1964. There was a considerable increase in the demand for Virginian flue-cured tobacco owing to a decreasing demand by the consumer for cigarettes containing Amarello tobacco. 484 metric tons of tobacco of all types were produced from 929 arpents compared with 325 metric tons from 511 arpents in 1964. Usings of domestic leaf by both manufacturers amounted to 485¼ metric tons compared with 462¼ metric tons in the previous year. There was a decrease of 5.6 per cent in the imported leaf used in manufacture compared with the previous year; the percentage of domestic leaf used in local manufacture rose from 77.2 per cent in 1964 to 82.8 per cent in 1965. Purchase prices of locally grown tobacco remained unaltered and growers received the following average prices and return per arpent compared with 1964:

	Average yield per arpent		*Average prices per kg*		*Average return per arpent*	
	1964	*1965*	*1964*	*1965*	*1964*	*1965*
	Kgs	*Kgs*	*Rs*	*Rs*	*Rs*	*Rs*
Flue-cured Virginian ...	503	436	7.25	7.35	3,649	3,208
Air-cured Amarello ...	1,097	1,232	2.60	2.35	2,852	2,897
Burley	418	418	2.58	2.42	1,080	1,011

20. The Mauritius Hemp Producers Syndicate continued to control the marketing of the aloe fibre, which was processed into sacks by the Sack Factory, for use by the sugar industry and for shipment to Burma for the bagging of rice purchased from that country by Mauritius. The number of fibre factories operating were reduced by 2 to 10 which produced 1,391 metric tons of aloe fibre which were purchased by the Sack Factory, an increase of 185 metric tons on the 1964 deliveries. This production was obtained from an estimated acreage of 3,012 arpents, of which 2,755 were from wild plantations. 774,622 pure aloe sacks were produced together with 731,639 sacks containing a mixture of aloe fibre and imported jute. In addition to the above two types of sacks, a further 46,521 sacks were produced together with 12,108 yards of filter press cloth, 4,110 yards of other fabrics, 17,140 kgs of yarn and 7,457 kgs of rope. The cost of production of these sacks was higher than the cost of imported jute sacks, with the result that the Sack Factory operated at a loss amounting to Rs 283,217 compared with a loss of Rs 638,000 in 1964. Prices of aloe fibre remained the same at Rs 1,200 per metric ton while that paid for jute cuttings was Rs 983 per ton, an increase of Rs 292.84 over the previous year. The reduction in the loss was attributable to an increase in the world selling price of jute bags which affected the price at which locally manufactured bags were sold to the sugar industry. During the year, the existing arrangements for the sale of bags to Burma for the bagging of rice sold to Mauritius continued; an agreement was reached for the export to Burma of 400,000 new aloe/jute bags and 400,000 one-used aloe/jute rice bags, to be used for the bagging of the 1966 rice purchases from Burma.

21. Selection within the creole breed for milk production and the upgrading of cows using selected creole bulls was continued. In Mauritius, with the arrival of room temperature semen from high producing, progeny tested, Friesian bulls from the Artificial Insemination Centre in Kenya, the policy of crossing the local creole breed with Friesian with a view to increasing milk production commenced in March. The semen was flown to Mauritius weekly, with the co-operation and assistance of the Department of Veterinary Services, Kenya. The use by farmers of Friesian semen available from the artificial insemination service is voluntary. If a farmer elected to use Friesian semen, his cow and the progeny were ear-tagged for breeding control purposes. 11,620 cows were inseminated either with Friesian or creole semen and, on the basis of first insemination, the average conception rate was 56.7 per cent, a few per cent lower than is customary. This slight reduction in conception rate is probably related to the use of Friesian room temperature semen. Some difficulty was encountered in the early stages occasioned probably by lack of volume in each insemination. This is being corrected and the conception rate should therefore improve. A visit in December by an artificial insemination expert, who had been working in Kenya, indicated that the results being obtained in the use of room temperature semen in Mauritius were similar to those obtained in Kenya. The Friesian bulls which were imported and sent to Rodrigues in 1964 were being used intensively with good results.

22. At the livestock breeding stations at Curepipe and Palmar, there were 304 head of the creole breed, 116 Ongoles, 63 Borans, together with 1 Brahmin bull. The Boran cattle at Palmar continued to show promise. Selected Ongole females have been crossed with Borans and the progeny indicated an improvement in the beef characteristics compared with Ongoles. The Boran bulls sent to Rodrigues for grading up the herd cattle on that island have produced some very attractive crossbred calves. The Brahmin bull, which has been used on a selected group of Ongole cows, has improved the beef potential of the crossbred calves and certain of the early crossbred calves are about to be put back to the Brahmin bull.

23. There was little demand for Large White pigs. 3 boars and 1 sow together with 10 young boars and 13 gilts were sold to breeders. The pig breeding project in Mauritius has not made the expected impact on pig production, probably due to the absence of efficient marketing facilities and the cost of feed.

24. The existing Anglo-Nubian and British Alpine goat breeds were augmented by a gift of 2 bucks and 12 does of the Jumna Pari breed from the Government of India. Up to the present, the Anglo-Nubian has shown the most promise under local conditions. The Jumna Pari, which is a big framed animal, will undoubtedly improve the local breed of goat for meat production. Preliminary milk yields of this breed indicated a production of 0.6 kg of milk per head per diem. During the year, 12 Anglo-Nubian bucks and 2 does were sold to breeders from livestock stations and 5 bucks were stationed at the district headquarters of the extension services to provide service facilities to goat breeders in rural areas. In addition 5 Anglo-Nubian goats were sold to breeders from district headquarters.

25. The production of Flemish Giant, Chinchilla Giganta, California white and New Zealand White rabbits was continued at Réduit. Litter sizes were reasonable but the mortality in litters was unusually high. Twenty-four rabbits were sold to breeders, including a pair of Flemish Giants exported to the Department of Agriculture, Seychelles. Twenty-five pairs of rabbits were sold to farmers from district headquarters.

26. The poultry breeding programme was continued. During the year, the Rhodes Island Red breed was discontinued because of lack of demand. The selected White Leghorn flock maintained their mean performance of 200 plus eggs to 500 days of age. This breed is losing popularity with the advent of more productive hybrids. The " 707 " Thornber hybrid for egg production was supplied to producers for the first time during the year and a new broiler strain from Cobb's was introduced as well as the Sykes laying strain, " hybrid 4 " for test purposes. 318,350 eggs were produced, of which 104,762 were incubated for the supply of chicks to the public, for replacing stock and broiler production at the poultry centre and for vaccine production. 62,550 chicks were hatched, compared with 29,326 in 1964. There was

a slight improvement in both fertility and hatchability of eggs set compared with the previous year but the performance was not equal to that obtained in 1963. 26,273 "404" hybrid chicks were produced and 5,034 chicks of the "707" hybrid. The centre marketed 94,445 kgs of dressed and live chicken produced from trials. The demand for broad breasted bronze turkeys was limited.

27. There was a slight increase in the demand for the products of the Livestock Feed Factory. 4,548 tons of livestock feeds were manufactured, compared with 4,342 tons in 1964. Fifteen types of feed were offered by the factory and 4,668 tons of feeds were sold, compared with 4,324 tons in 1964.

28. It is regretted that the compilation and publication of the livestock census of Mauritius, carried out in 1964, was not completed during the year. It should be available for publication in 1966. The annual cattle census on the cattlewalk in Rodrigues was carried out as usual and indicated a total cattle population of 4,239. The cattle population of the cattlewalk is falling gradually as the development of this area is proceeded with, there being a corresponding increase in the cattle population on rehabilitated and development mixed farms.

29. The health of livestock at the various livestock and agricultural stations was satisfactory. No major new diseases were reported in cattle and no deaths due to piroplasmosis were reported. The field staff of the Veterinary Services division attended to 5,529 cases, of which only 2.3 per cent were related to infertility in cattle and 9 per cent were concerned with calcium and phosphorus deficiency. No case of summer mastitis occurred amongst cattle on livestock stations. The Animal Health laboratory prepared and commenced a general survey with a view to determining the incidence of sub-clinical cases of mastitis in the cattle population. Five goats were lost at Palmar from coccidiosis and 4 cases of metritis occurred in the Jumna Pari goats while they were in quarantine. The disease situation in the poultry centre was similar to that of the previous year, save that blood samples from all breeding stock revealed a 7.3 per cent incidence of C.R.D., following which all positive reactors were culled immediately. The average monthly mortality amongst adult stock from all causes was 2.3 per cent, amongst growers stock 7.8 per cent and amongst chicks 4.3 per cent. As in the previous year, the major diseases affecting the stock were the leucosis complex and nutritional deficiency. Pooled blood samples from the centre were sent to Rhodesia for testing for Infectious Bronchitis with negative results. Mortality amongst rabbits was due to coccidiosis and there was no outbreak of snuffles. The Animal Health laboratory carried out 5,592 post-mortem examinations, 170 milk samples were subjected to bacterial examination, 1,703 samples were examined for protozoan diseases, 59 faecal examinations were carried out and 636 cultures prepared. The laboratory produced 14,400 doses of inactivated Newcastle vaccine, 14,300 doses of Fowlpox vaccine and 13,200 doses of Canine Distemper vaccine.

30. During the year, a vaccination service was commenced using locally trained vaccinators with a view to improving the control amongst poultry producers of Newcastle disease. 70,093 birds were vaccinated against Newcastle disease and 4,395 birds against Fowlpox. The vaccinators have also been trained to assist small poultry keepers with advice as to management and feeding.

31. The annual tuberculin test of herd cattle was carried out. 1,017 herd cattle in Mauritius, 391 milch cattle in Mauritius and Rodrigues were tuberculin-tested using the single interdermal comparative test together with 24 buffaloes. In herd cattle, there were 24 positive reactors, an incidence of 2.4 per cent and 21 doubtful. There were no reactors in the milch cattle tested. Amongst the buffaloes, 54.1 per cent gave a positive reaction to the test. All reactors were disposed of by slaughter and doubtful cases were isolated for subsequent re-testing.

32. The facilities at the Animal Quarantine station at Roche Bois were extended by the construction of 4 new isolation pens for goats from Madagasikara, imported for slaughter. In compliance with the provisions of the Animal Disease Ordinance, 65 ships and 14 aircrafts carrying livestock were cleared and 1,068 import permits and 590 landing permits were issued. All frozen meat landed was subjected to veterinary inspection prior to release. 86 certificates of veterinary health were issued in respect of the export of molasses and 30 veterinary certificates of health in respect of the export of dogs, cats, horses and birds. For the first time, broilers produced in Mauritius were exported to Reunion.

33. At the Roche Bois Quarantine station, 7,883 head of cattle, 7,141 from Madagasikara and 632 from Rodrigues, were received, together with 4,744 sheep, 1,399 from Rodrigues and 3,345 from Australia, as well as 4,359 goats, 1,446 from Madagasikara, 2,808 from Rodrigues and 105 from Australia. 4 Berkshire boars and 4 in-pig gilts, together with 2 Jumna Pari bucks and 12 in-kid does were also received at the quarantine station, as well as 470 caged birds. At Réduit, 6 dogs and 4 cats were quarantined together with 1,646 day-old chicks.

34. The weekly returns from 6 slaughter houses reported that 2,241 calves, 2,669 cows and 1,896 bulls of the local milch breed were slaughtered, together with 674 herd cattle and 627 bullocks from Rodrigues, as well as 7,302 bullocks from Madagasikara. Imports of frozen beef amounted to 1,028,367 lbs and salted beef to 70,000 lbs. The total fresh, frozen and salted feed consumption was therefore about 5,140,479 lbs giving a per capita consumption of 6.8 lbs exclusive of illegal slaughter and processed beef products. The number of cows of the milch breed that were slaughtered for beef production was 2,579, a slight reduction on the number slaughtered in 1964, namely 2,973. It is estimated that locally produced mutton and goat meat amounted to 317,230 lbs. Imports of frozen mutton and goat meat amounted to 1,356,889 lbs, giving a per capita consumption of 2.21 lbs. In the case of pork, it is estimated that 947,382 lbs were produced locally, 38,457 lbs were imported giving a per capita consumption of 1.31 lbs.

35. It has not been possible to estimate local egg and poultry meat production. Imports of frozen poultry rose to 575,599 lbs compared with 419,702 lbs in 1964, while egg imports fell to 32,937 dozen compared with 66,300 dozen in the previous year. It is of interest here to note that importation of livestock feeds including raw materials for livestock feeds of animal origin for manufacture rose to 9,624,398 lbs compared with 5,618,531 lbs in 1964. The incidence of tuberculosis in 7,302 head of Madagasikara animals slaughtered in Mauritius was 5.6 per cent. In contrast, the percentage for 7,480 head of local animals slaughtered was 0.25 per cent.

36. The in-service training of junior staff of the Veterinary Services was intensified in that 36 lectures and practicals were given together with film shows illustrating various aspects of disease control and animal husbandry. In addition, staff was provided with reference notes on animal health and production prepared by the staff of the division.

37. On land settlement, settlers holdings were farmed satisfactorily. The irrigation system was completed at Terre Rouge and in certain foodcrop settlements requests for increasing the acreage under sugar-cane had to be refused. Sugar yields were above normal and good foodcrop yields were obtained at Plaisance and elsewhere. Rent collection was again very unsatisfactory. Towards the end of the year, an Executive Officer was appointed to the Extension Services, mainly for the collection of rent.

38. The Crop Extension Services were again mainly concerned with increasing productivity per acre by improved crop husbandry to ensure better yields and higher incomes to farmers. Some 71,100 field visits were paid to sugar-cane and foodcrop producers. During these visits, the rational use of complete fertilizers was stressed as well as the choice of varieties in relation to ecological conditions. The advisory service also stressed, particularly for vegetables and foodcrops, the timely control of pests and diseases of economic importance and the value of crop rotation in connection therewith. Twenty-five fertiliser demonstrations were laid down on farmers holdings together with 106 demonstrations on the proper use of pesticides and fungicides for the control of plant pests and diseases. Forty-eight evening meetings were held for small farmers at district headquarters throughout the island during the summer months, at which problems of agricultural interest were discussed and lectures given, accompanied by visual aids on agricultural topics of the moment. The main subjects reviewed at these meetings were the incidence of gummosis and the resistance characteristics of sugar-cane varieties, the use of fertilizers, together with time and method of application, control of pests and diseases and the precautions to be taken when using certain pesticides, potato cultivation and the better utilisation of land coupled with soil conservation. In addition, three series of two lectures each were delivered on sugar-cane and potatoes: the former to planters in the Moka/Plaines Wilhems area and the latter to planters of Rivière des Anguilles and Mapou.

39. Possibly due to climatic conditions during harvest, the effect of the virulent strain of gummosis on sugar-cane, recognised in 1964, was not as severe in 1965 as was expected. Steps have been taken at district headquarters to increase the acreage under M. 442/51 which shows resistance to gummosis and to encourage planters to consider replacing M.147/44 as soon as circumstances permit. Thirteen field assistants were recruited with a view to surveying small planters fields, to determine the incidence of gummosis and the distribution of the varieties M.147/44, B.3337, B.34104, in smallholdings with a view to their replacement by 1970. The field assistants underwent a period of training at the Mauritius Sugar Industry Research Institute, following which they were posted to factory areas.

40. The two major diseases affecting potatoes and tomatoes were late blight and bacterial wilt. The very wet weather during the crop rendered the control of late blight extremely difficult, low yields being obtained in consequence, especially in June and July. Winter cucumbers were affected by anthracnose for the first time. As customary, tomato borers, fruit flies, thrips, aphids and red spiders were of common occurrence in plantations. The Entomological division released parasites for the biological control of the potato tuber moth in the Black River area. In certain localities, the incidence of spot borer on both virgin and ratoon sugarcane was heavy and was controlled successfully by applications of dieldrin 15.

41. A large acreage of virgin cane interlines was planted to potatoes, tomatoes, groundnuts, beans and maize. With the shortage of potato seed in June/July, interlines that were intended for potato cultivation were switched to beans and peas, resulting in over-production of French beans and low market prices. In the wetter regions, there was an increase in the use of ratoon interlines for the production of potatoes, beans and peas. The following table illustrates the acreage planted on sugar-cane fallows and interlines in response to the Foodcrop Committee's appeals:

Crop	*Planted on fallows (arpents)*	*Planted in interlines (arpents)*
Maize	217	1,362
Beans	12	683
Potatoes	6	1,001
Groundnuts	282	1,256
Miscellaneous Crops ...	1,040	401
TOTAL ...	1,557	4,703

42. The six demonstration plots operated by the Extension Services were maintained satisfactorily and continued to supply a wide range of planting material of both food and forage crops to meet increasing demands by farmers. A substantial acreage of the demonstration plots was devoted to the cultivation of bananas, pine-apples, manioc, sweet potatoes and fodder grasses to met the demands for planting material. The acreage under the sugar-cane variety M.442/51 was increased as much as possible to provide

cuttings to small planters. Fertility demonstrations were carried out on all demonstration plots with a view to demonstrating the value of complete fertilizer compared with nitrogen alone or no fertilizer. In addition, practices of pest and disease control were demonstrated; fruit trees and other planting material were available at all times for sale to the public.

43. An area at Mare Choisy, used for the production of foodcrops, has suffered from water logging during the winter months for several years owing to the river Françoise, which drains the area, being choked with water hyacinth and other weeds. Evening meetings were arranged by the Extension Officers in the area with a view to persuading farmers to help themselves. As a result of these meetings, the Ministry of Health was approached with a view to the malarial services of that Ministry clearing the river mouth of weeds; the farmers themselves working in self-help groups cleared the main drains in the area, with the result that the water table has fallen throughout the area, with benefit to production. Farmers of the area are now endeavouring to raise funds with which to rebuild bridges and culverts, which had fallen or disappeared through neglect and, in some cases, had collapsed, blocking the drainage canals.

44. The close liaison established between the officers of the Extension Services and those of the Mauritius Sugar Industry Research Institute was maintained and field visits were organised for the in-service training of officers, especially in connection with disease and pest control. Nine lectures were delivered by officers of the Institute to the staff of the Extension Services on sugar-cane. All aspects of the subject from the selection of cane varieties through soils, fertilizers, weed control, irrigation practices, pest and disease control and cane quality were dealt with in these lectures.

45. The ' Produce More Food ' campaign was extended to five more villages. As in the past, efforts were mainly directed towards the growing of fruit trees and foodcrops and the raising of poultry. The local ' Produce More Food ' committees met at regular intervals and weekly visits were paid by Extension Officers. 2,183 fruit trees of various types and 2,173 two-months old chicks of the White Leghorn / Rhodes Island Red cross or " 404 " hybrids were distributed to villages as well as youth clubs and young farmers clubs. Planting material of grasses, food and foodcrops were given free on request to villages participating in this campaign. Five Anglo-Nubian goats and 25 pairs of rabbits were sold to farmers. It is of interest to note that some of the fruit trees planted at the beginning of the ' Produce More Food ' campaign, have commenced to fruit. During the Social Welfare Month in villages in the south of the island, lectures and demonstrations on fruit tree planting were given to several villages and the staff of the Extension Services participated in a committee which organised the programmes. At the Agricultural Show held from the 20th to the 22nd of August at the Royal Botanical Gardens, Pamplemousses, several participants in the ' Produce More Food ' campaign exhibited and obtained prizes.

46. During the year the material removed from the silage pits, filled in 1964, was of good quality and was readily eaten by animals to which it was fed. Ten silage pits were refilled. The interest shown in silage production by cowkeepers remained negligible in spite of the annual demonstrations; only 3 cowkeepers showed any interest in silage making.

47. The potato spraying unit appears to have served its purpose as very few requests were received for its services during the year. Requests received were mainly from the wetter areas of the island which only recently tended to increase their potato production. For the year, 60 arpents were sprayed; most professional growers now have their own spraying equipment. Growers continued to show interest in the use of certified seed potatoes. 2,461 permits for certified seed potatoes were issued to planters under the subsidy scheme. Unfortunately, there was a shortage of supply of certified seed during the period June/July with the result that only 1,536 permits were filled, involving the issue of 704 tons of certified seed. It is estimated that 1,015 arpents of potatoes were planted, giving an average yield of 3.4 tons per arpent, which is much below that of the previous year. The low yields can be explained by the fact that plantations suffered severely from late blight and bacterial wilt during the first season while, in the second season, yields were normal to high. Throughout the year, potato market prices remained at a fairly high level, save for a short period in October/November, when prices fell due to a temporary glut.

48. The foodcrop production of the island was estimated at 42,722 metric tons compared with 31,171 metric tons in 1964. The area harvested rose from 8,364 arpents in 1964 to 9,803 arpents in 1965. There was a substantial increase in the acreage and consequently in the yield of bananas, no losses having been experienced because of cyclonic winds. There was a considerable increase in the acreage and production of maize as well as in the acreage and production of groundnuts. The potato acreage planted only fell by 200 arpents compared with 1964 but because of reduced yields per arpent, the estimated production fell from 5,930 metric tons in 1964 to 3,972 metric tons in 1965. There was an increase in both bean and pea production as well as mixed vegetables.

49. At Curepipe station, the road system was extended. The fertilizer and tool store and an implement shed were completed. Two old stores were converted for use in potato storage trials; the fish ponds were improved by the construction of a concrete dam preventing flood water from carrying *Tilapia* fry into ponds containing *Catla Catla* and *Labeo rohita*. Half an acre of land under scrub, along the sides of the stream flowing through the station, was cleared and brought into production. Variety and fertilizer trials on forage grasses were continued. Two varieties of fodder oats, introduced from Israel, yielded 4 to 5 tons of fodder per acre after 2 months' growth; re-growth was negligible, following harvest. *Setaria* responded to high rates of nitrogen as well as close spacing. The cost of production of this grass under conditions at Curepipe was Rs 16.21 per ton of fresh grass.

Spacing trials of Elephant grass gave higher yields with closer spacing. Citrus continued to give poor results under the climatic conditions at Curepipe, while high yields were obtained from the guava orchard. Spacing and fertilizer trials were laid down with *Colacasia esculenta*. All potato trials were abandoned because of heavy infestation with late blight due to unusually wet conditions. Winter vegetables were again produced during the summer months; confirmatory results of previous year's work were obtained namely that, in the upland areas, it is possible to produce winter vegetables during the summer.

50. Flocks of ducks and geese were maintained and thrived in association with the fresh water fish ponds. 211 tons of silage were produced in the two tower silos at the livestock breeding station and 1,591 tons of green fodder were supplied from the station. 965 tons of farmyard manure, produced at the livestock station, were supplied to various stations of the Department and other Government organizations.

51. The production of fresh water fish in the ponds at Curepipe was continued with satisfactory results. *Catla Catla* and *Labeo rohita* fry received from India in September, 1962, had reached an average weight of 8 to 10 lbs respectively; neither species have reproduced to-date. 613 *Tilapia* fingerlings were sold and 1,063 lbs of fish were sold for eating.

52. At Plaisance, the orchards of citrus, Malayan Dwarf and Pemba coconuts, mangoes, litchis and pine apples have continued to thrive. All varieties of vines showed poor vigour. The quality of the oranges produced was again satisfactory. The green Malayan Dwarf coconut palms flowered as well as Pemba. Spacing, fertilizer, variety and observation trials were carried out on ginger, beans, onions, potatoes and sunflowers; vegetables were grown for seed. The onion trials were of particular interest in that yields varied from 20 to 22½ tons per acre. Within the airport area at Plaisance, an additional 7 acres of land was planted under grass for fodder production. 463 tons of fodder were obtained for feeding livestock at Curepipe.

53. At Réduit, the fencing of the additional area acquired last year was completed; 5 acres of this area was made available to the Mauritius Sugar Industry Research Institute for gummosis resistance trials on sugar-cane, the remainder being put under foodcrops. Satisfactory yields of oranges were obtained, one Parson Brown orange, 10 years old, bore 509 fruits. The Seminiole tangelos fruited, 9 plants producing 2,577 fruits which are very suitable for making juice. Maniole tangelos fruited for the first time, the fruit being very edible. As at Curepipe, Marsh grapefruit and Florida rough lemon appeared to be unsuited to the climatic conditions of Mauritius. The yields of both the Nain and Ollier bananas were similar, being 13.5 and 14 tons per acre respectively. The banana collection was maintained. The introduced arabica coffee variety K.3 from Kenya fruited well and produced coffee of good flavour and aroma. Fertilizer and spacing trials were laid down on various grasses and, in the case of Elephant grass, frequent appli-

cations of nitrogen appeared to be associated with increased yields. Observation trials with two fodder oat varieties, imported from Israel, gave similar results to those obtained at Curepipe with negligible re-growth after cutting. The imported *Leucaena glauca* varieties once again outyielded the local strain of acacia, the highest yield obtained being 21 tons per acre fresh weight compared with 11 tons per acre for the local strain. *Desmodium intortum* was again the only legume that survived in association with Elephant grass and *Panicum maximum* variety *trichoglume*. As observed previously, *Desmodium intortum* again completely swamped Pangola grass. Various imported grasses and legumes were under observation. The manioc collection was maintained and a variety trial was laid down. Spacing and variety trials on sweet potatoes were carried out together with variety trials with introduced maize varieties including hybrids. Groundnuts and sunflowers were planted for bulking on the station.

54. At Barkly, the irrigation system was extended to the orchards and an implement shed was built. This station was the centre of vegetable seed production and controlled the seed producing acreage on other stations. Thirty-one acres at Barkly and some 11 acres on other stations were devoted to the production of vegetable seeds; 24,200 lbs of seeds were processed during the year. Revenue from sale of seeds and plants again rose in 1965 to Rs 71,534.42 compared with Rs 64,911.97 in the previous year. Some 4,000 Florida rough lemon stock were budded. An additional 5,000 Malayan Dwarf seed coconuts were imported from Penang. A disappointing litchi crop was obtained.

55. At Abercrombie, the grape variety "Napoleon Chasselas" continued to show considerable promise; at the end of the year, the vines were carrying some 70 bunches of grapes. The mango orchard continued to make good progress.

56. It was estimated that 179,000 people visited the Royal Botanical Gardens during the year. An Agricultural Show was held in the gardens in August and attracted a large attendance. The gardens were maintained satisfactorily and, with the assistance of the Mauritius Herbarium, the identification and labelling of plants continued. The nursery continued the large scale propagation of economic and ornamental plants to meet public demand.

57. At Richelieu, the clearing and development of 40 acres of land, previously under aloe fibre, were continued. During the first half of the year the land was de-stoned, storm water drains were dug and fields laid out. The area was sub-divided into 20 acres of arable land to be used as an experimental ley farm, an area of 4 acres to be used for a pilot mixed farm and 6 acres to be planted with fruit crops, mainly citrus and bananas. The pilot mixed farm will be occupied by a peasant family on a share farming basis with a view to determining the economics of a peasant mixed farm of this type producing arable crops, orchard crops and carrying livestock. One and a half acres of land were purchased from a neighbouring

estate for the construction of an in-take reservoir. By the end of the year, all materials for the water mains leading from the reservoir, which is outside the station, into the station as well as for the overhead spray irrigation system within the station had been received. The new reservoir will be linked with the existing reservoirs on the station with a pressure maintaining valve enabling surplus water to be discharged automatically into the existing reservoirs.

58. The production of tobacco, together with the seed requirements of the country, were continued at Richelieu and Pamplemousses stations. Methyl bromide continued to demonstrate its effectiveness as a soil sterilent for tobacco nurseries. Seed production was maintained with a view to holding two years' supply of all seed of the commercial varieties in case of natural disasters. The variety N.C.25, originally introduced from the United States, continued to show resistance to nematodes as well as black and Granville wilt diseases. This variety will be released for testing by selected growers in 1966. The new varieties Vesta, N.C. 73 and Coker 187 were again tested by growers in the field with satisfactory results. Burley varieties 11A, 11B and 37 were tested for yield and quality in a variety trial. The tobacco crop on both stations suffered from severe leaf bruising as a result of cyclone ' Rose ' in May, while the advent of high winds in July and August aggravated this damage, with the result that the quality of leaf generally was below the average for the previous year. The quality of leaf prevented the continuation of the curing trials with various fuels commenced in 1964. Weather conditions interfered with tobacco variety and fertilizer trials; the variety N.C. 25 was outstanding as to yield, being highly resistant to black shank and nematodes and fairly resistant to bacterial wilt. The trials with two varieties of oriental tobacco, namely Samsoun and Soluck, were continued and the cured leaf was of satisfactory quality. The new Burley variety 37 outyielded Burley 11A and to a lesser degree 11B.

59. Owing to the poor quality of leaf as a result of wind damage, a repeat of the curing trials, using various fuels, carried out in 1964, became impossible. However, following consideration of the 1964 results, the Tobacco Board approved the use of gas curing by tobacco producers early in the year and in the first season more than a dozen " Gastobac " units were installed in growers' barns. The cost of flue-curing using gas was somewhat reduced when the price of gas fell from Rs 1.80 to Rs 1.50 per kg. Later in the year, the Tobacco Board approved the use of oil-curing units by tobacco growers and some 20 " Nu-oilmatic " units were installed in growers barns. The cost of producing 1 kg of tobacco is lower with oil-curing than with flue-curing using local firewood. Experiments at Richelieu have indicated that it is possible to complete a cure in gas-fired or oil-fired barns within 96 hours, whereas the time taken in a flue-curing barn using firewood is well over 120 hours. The average prices obtained per kg of leaf for flue-cured, gas-cured and oil-cured systems respectively were Rs 5.61, Rs 6.71 and Rs 6.61. At Pamplemousses, where a " Gastobac " unit has been installed in one barn, the other remaining a flue-curing barn using firewood,

the relative prices obtained were Rs 6.33 and Rs 8.02 per kg of leaf from firewood cured and gas cured barns respectively. The 1965 tobacco crop, from both stations, was sold to the Tobacco Board for Rs 35,941.96. In addition, the tobacco cured in 1964, using "Nu-oilmatic" equipment, which had been held in storage pending manufacturers tests indicating that the tobacco was acceptable and without taint, was also disposed of to the Tobacco Board for Rs 11,453.35.

60. At Richelieu, trials with foodcrops in pure stand or in association with sugar-cane were continued. The potato variety trials suffered from adverse weather conditions and, in the second season, imported varieties from Norway were completely wiped out by late blight. It would appear from tests carried out on imports of Norwegian seed potatoes, in both seasons, that there is no difference in the crop from potatoes carried from Europe either under cold storage conditions or in ventilated holds and, as the latter is cheaper, there appeared to be no justification for the additional cost of transporting seed potatoes from Europe in refrigerated holds. Shortage of seed potatoes in the middle of the year resulted in the curtailment of the programme. Samples of potato varieties from South Africa planted in sugar-cane interlines resulted in normal yields, the variety Susana giving an exceptional yield of 7 tons per acre. The yields of crops grown from South African seed compared with the seed from Japan, late in the second season, indicated that the South African seed gave considerably higher yields. As customary, vegetable seeds were produced on the stations, the largest acreage under a single crop being 10 acres producing bean seeds. The flowering behaviour of onion varieties was also observed and the three-ton emergency stock of local maize seed was renewed. Spacing trials on groundnuts, planted in sugar-cane interlines, were carried out and yields of a ton to the acre were obtained. Introductions of sunflowers for oil production were under trial and, in October, plantings took place in sugar-cane interlines to obtain observations on spacing and yield as well as to ascertain whether sunflowers were a suitable crop for oil seed production in interlines. Sunflowers in interlines showed considerable promise. 896¼ metric tons of sugar-cane were harvested compared with 690¼ tons in 1964.

61. The citrus orchards at Richelieu fruited and a number of tangelos flowered for the first time. Citrus flowers twice a year at Richelieu in May/June and again in November/December. The citrus orchards were extended with the planting of a further three and a half acres at the beginning of the year with windbreaks of "Maison Rouge" mangoes, pineapples being established in the interlines. The mango and litchi orchards continued to make progress, the mango flowers and fruits suffered from authracnose. The insecticide bidrin proved very efficacious against gall midge.

62. The Agricultural division was responsible for the planting and maintenance of forage crops at Arsenal, where the Pangola grass plots were maintained, the grass being supplied to local cowkeepers. Acacia was planted in rows at intervals in the Pangola plots but have shown very little growth. *Tecoma* and pine forest plantations were under-planted with acacia which

failed to grow. At La Ferme, the establishment of Pangola grass was continued, a total of 8 acres were planted of which 5 acres had become established. A variety trial comprising *Setaria,* Rhodes grass, varieties of Guinea grass *Cenchrus, Brachiaria, Hyperhaenia,* together with such legumes as lucerne, clover and *Desmodium* was continued. The extension of the Pangola pastures at Palmar was also continued. Two new paddocks were planted and fertilizers were applied to all plantings as required. Grass trials with various introduced grasses such as *Cenchrus, Brachiaria,* Rhodes grass and varieties of Guinea grass were continued. The paddocking of the station continued and 5,982 feet of stone walls were built. At Bois Marchand, observation plots containing various grasses were established and 12 acres were cleared and planted with Pangola grass. A variety trial with imported acacia varieties was laid down.

63. During the year, the tobacco crop suffered somewhat from leaf-spot diseases in the first season, the second season being remarkably free. Aphids were abundant but tobacco mosaic and the virus complex was not widespread. Tobacco venal necrosis was not found in material despatched overseas for identification. Isolated patches of tea showing vein clearing and chlorotic mottling, leading to successive defoliation, were observed in two localities in the superhumid zone. Conditions were suggestive of tea yellows and applications of sulphate of ammonia to moderately affected patches appeared to clear the condition. Individual tea plants in the locality of dead tree stumps suffered from a root disease caused by *Ustulina zonata.* Owing to weather conditions, potatoes suffered generally from bacterial wilt, bacterial rot together with late blight and, in some fungicide trials, one or other of these diseases were so severe as to nullify the trials. The imported groundnut varieties Manipintar and Makulu Red were found to be less resistant to bacterial wilt than the local variety Cabri but more resistant to leaf damage by *Cercospora.* Fungicide trials laid down on various food and vegetable crops have given some interesting results and valuable observations on the resistance or susceptibility to various wilts of varieties of vegetables were obtained. Citrus canker was again widespread. At Réduit, it was found that copper oxychloride gave better control than zineb. The drop of young citrus fruit was quite severe at certain stations; a fusarium was found in association with this condition together with mites. Twig dieback was also prevalent in certain localities.

64. The Plant Pathology division was responsible for plant inspection at points of entry and for the provision of phytosanitary certificates for exports. 1,158 plant import permits were issued, together with 348 phytosanitary certificates for plant material being exported. 4,878 certificates of examination were issued for plant material or plant products imported into the island. The two plant quarantine greenhouses for plant introductions, other than sugar-cane, were maintained and a variety of economic and ornamental plant underwent quarantine. The sugar-cane quarantine greenhouse was operated on behalf of the Department by the Mauritius Sugar Industry Research Institute. 41 sugar-cane varieties were in quarantine. Two varieties received did not germinate and one variety from Hawaii, showing leaf symptoms suggestive of mosaic, was destroyed.

65. Following the visit to Mauritius of the Director of the Commonwealth Institute of Biological Control, the work of the Entomological division was re-orientated somewhat towards increasing the activities of the division on biological control of certain of the major pests of the island. This re-orientation became possible, following the success achieved locally in various fields of biological control, notably the introduction of the predator snail *Euglandina rosea* and the remarkable change in the pigeon pea pod borer situation, following the introduction of West Indian parasites some years ago. The air-conditioned laboratory, set up to facilitate the breeding of parasites for biological control, has proved invaluable for the multiplication of introduced parasites, so much so that plans have been made to expand the insectarium by the construction of three additional air-conditioned rooms.

66. Considerable progress was made in the introduction of predators and parasites against fruit-flies and stable flies, the rhinoceros beetle attacking coconuts and other palms, the potato tuber moth, which is also a major pest of tobacco and on the control of *Heliothis armigera*, a major pest of tobacco. In addition, another insect attacking lantana was introduced from Trinidad, aimed at controlling this weed in humid areas. A possible pest of the weed ' herbe des mares ' or ' herbe banga ' was introduced from India but was not released when it was found that it fed equally well on tobacco seedlings.

67. Concurrently with work on biological control, the division continued its extensive work on testing pesticides for the control of the numerous pests attacking crops in Mauritius. Considerable improvements were obtained in pest control as a consequence of this work. Adequate control can now be obtained by farmers in the field of some of the major crop pests which normally cause considerable loss in the field. Hand in hand with work on pesticides has been the testing of new spraying equipment coming on the market, to enable sound advice to be given to the farming community.

68. Analyses of the raw materials imported for the manufacture of livestock feeds were carried out by the Chemistry division as well as analyses of the prepared feeds sold to the public. Analyses of introduced grasses and other forage crops under trial, together with silage were continued. Routine checks of the milk produced at the Curepipe dairy, confirmed previous findings that the normal range of butter fat content of the milk of the local milch breed was from 3.5 to 4.5 per cent. At the request of the Agricultural Marketing Board, the staff recruited to purchase milk at collecting centres were trained in the tests to be carried out at the centres to prevent the purchase of adulterated milk. Preliminary observations were made on the insecticide residues on carrots and beans treated with aldrin. Assistance was given to a company set up to compost town refuse, as a result of which important modifications were made to the process.

69. The Engineering division was responsible for the servicing, repair and maintenance of all departmental vehicles, tractors and machinery. At the Central Workshop, some 776 vehicles, tractors and machines were

serviced and/or repaired and two lorries and a jeep were completely overhauled. Doors and ventilators were designed for a new raw material store for the Livestock Feed Factory. A blower was designed and manufactured for potato storage trials; a mist propagator was installed at the tea experiment station; bodies were made for a lorry and trailer and miscellaneous furniture, gates etc., were manufactured. A large concrete raw material store was constructed for the Livestock Feed Factory together with a greenhouse and miscellaneous small buildings. Eight two-roomed milk centres were constructed and two buildings converted for use as milk collecting centres. The equipment for 21 milk collecting centres was also installed by the division. A 400 metric tons circular steel storage tank for molasses was built at the Livestock Feed Factory and an ex-railroad station 450 feet in length was dismantled for subsequent erection on agricultural stations as implement sheds and cowbyres. The division also carried out minor repairs to quarters and departmental buildings.

70. The Livestock Feed Factory sold 4,668 metric tons of livestock feeds manufactured from imported raw materials, save for molasses.

71. The enforcement of the fishing regulations and the collection of fish landing statistics were continued. With a view to increasing the efficiency of enforcement of the fishing regulations and preventing the dynamiting of fish, 3 mobile flying squads comprising an officer and 4 guards were set up during the year. These have proved most effective owing to their mobility. Three fish sheds were built. During the year, 1,119 metric tons of fish were landed, of which 26.8 per cent were obtained by net fishermen. The landing was slightly less than in 1964 and 255 tons less than in 1963. There is little doubt that the reserves were overfished during the year as they have been in recent years and, if the frequency of fishing continues, the catches from the reserves will shortly be similar to those obtained from the lagoons. If this occurs, the reserves will be of no value as breeding grounds and sanctuaries for fish, with resulting serious repercussions on the fish stocks in the lagoons and consequential hardship on the fishermen. A study of the average total landings for the 5-year periods from 1946-65 inclusive indicated that the drop in production in the waters surrounding Mauritius is serious and immediate steps will have to be taken if this is to be stopped and production raised.

72. Dr. Fougère, of the Fisheries Research Board of Canada, continued to assist in the development of the fisheries of the island. The investigational work into the catching and processing of shark was completed. From August, the shark programme went into its extension phase with fishermen being shown how to set and operate shark lines and process the meat. Fifty-three sharks were purchased to the end of the year. An assessment of the labour requirements and returns from processing shark meat was made. It was shown that one man with a helper and a vehicle for the collection of shark caught around the coast were capable of processing five sharks per day with a total expenditure of Rs 1,651 for 53 sharks and a total revenue of

Rs 1,713 when selling dried salted shark at Re 0.75 per lb wholesale and shark fins at Rs 6.00 per lb. If this operation was conducted by a group of fishermen on a co-operative basis, the shark enterprise being a side line to fishing and five sharks were processed per day, the profits to the fisherman would be considerably higher.

73. The demonstration of the value of gill nets was continued and the fishermen of the Ste Cecile Co-operative Society at Bambous Virieux fished with 2 gill nets, of 900 and 600 feet respectively, instead of one large seine; it was clearly demonstrated by these fishermen that the return of fish caught per day was at least equal to that of large seine nets with the added advantage that the gill net did not deplete the lagoons of immature fish. As a result of the work on gill nets over the past few years, firm recommendations were made to Government for the use of gill nets in Mauritius, which recommendations are equally applicable to Rodrigues.

74. With a view to determining the production and economic possibilities of fish farming in barachois, a farm has been established at Beau Vallon barachois, Mahebourg, with a view to supplying preliminary information on the production of edible fish in barachois. At the same time, experiments were being carried out as to the possibility of raising crustacae in the barachois. The Beau Vallon barachois was divided into 3 sections: *(a)* a small basin used for the study of the breeding and spawning habits of crabs; *(b)* a large section, about an acre in extent, containing several hundred crabs and some crawfish, which are fed on scrap fish produced in the main area of the farm, with a view to determining growth rates, etc.; *(c)* the main section of the fish farm, covering an area of roughly 25 acres, which was stocked with such fish as cordonnier, breton, gueule-pavé and batardé, The stocks were augmented by an inward migration of small mullet. The farm will be fished with traps designed for selective fishing.

75. It was found that, owing to the high salinity of the water in the Beau Vallon barachois, over 50 per cent of the oysters that had been established in the barachois died. In consequence, the experiments on the cultivation of oysters were transferred to Vieux Grand Port where conditions were suitable for oyster culture. Since the transfer, mortality has been nil and definite growth has occurred.

76. One of the objectives of the fisheries development programme in Mauritius is the mechanisation of fishing boats. With this in view, a series of four experimental boats have been constructed with an overall length of 22 ft, a beam of 6 ft and a draught of about 1 ft. A fifth is in the process of construction. It is hoped that this final model will prove completely satisfactory and would be able to serve as a model for future construction. The cost of one of these improved boats, complete with outboard engine, would be approximately Rs 5,000. This would be beyond the reach of individual fishermen but would be practicable for groups of fishermen.

77. In the early part of the year, weather conditions in Rodrigues were favourable to the growth of the main maize crop and good yields were obtained. From September onwards, the island experienced dry conditions which affected the second season maize crop as well as onion and bean yields. These conditions continued to the end of the year, preventing a start being made on the planting of the 1966 main maize crop. 462 tons of onions and 14 tons of garlic were exported; the yields of onion were disappointing because of the dry weather in the latter half of the year. The total onion crop was slightly larger than that harvested in 1964. 4,516 pigs were exported, 140 less than in 1964, which was a record year. The Agricultural Marketing Board again purchased the Rodriguan onion crop ensuring reasonable prices to the Rodriguan farmer, In late October, the arrival of onions from Rodrigues prevented an acute shortage on the Mauritian market. The value of exports was some Rs 55,000 less than in 1964. This was not unexpected because of the prolonged dry weather in the latter half of the year. There was an increase in the consumption of fish and meat on the island, due to the increasing population and the rising standard of living.

78. The Agricultural Development Programme was continued and, at the close of the year, a further 300 acres of land had been terraced, 90 acres paddocked for rotational grazing and about 17,000 ft of storm water discharge canals constructed. There were 1,248 vegetable plots, 887 lowland farms, 1,221 unit farms, and 57 peasant dairy farms completed by the end of the year. Over 1,500 families remained, farming unprotected and non-rehabilitated land of very poor fertility, subject to severe erosion. The soils of unit, lowland and dairy farms take from 3 to 6 years, depending on their situation and the severity of erosion prior to rehabilitation, to recover full fertility. In consequence, relief work has got to be provided to some 1,200 families to assist them over the main maize crop growing period from December through to April and this period may have to be prolonged, if dry weather at the end of any one year extends the main maize crop into May/June. It is estimated that such relief work will have to be continued annually for a further 6 to 9 years at an annual diminishing level.

79. Re-afforestation, with filao, of steep eroded slopes and hill tops was continued; a further 320 acres were planted making a total of 1,870 acres re-afforested since the inauguration of the development programme. These plantations have resulted in a striking improvement in erosion and water control. Filao has proved an excellent tree for quick cover on poor eroded soils and windswept ridges. During the year, 75 acres of planted filao were badly damaged by fire.

80. The development and maintenance of the island's farm water supplies continued. At the end of the year, 37 dams, 18 water storage tanks and 6 diesel pumping plants were installed and the total quantity of distribution pipe laid, since the inception of the programme in 1961, amounted to 264,374 linear feet compared with 144,611 linear feet laid to the end

of 1964. The total number of water taps installed on this pipe for farmers' use was 849. The demonstration unit farms were maintained as well as the six livestock breeding centres for the production of cattle and pigs for sale to farmers. At the end of the year, the breeding centres and demonstration farms were stocked with 482 head of dairy cattle, 302 pigs of all ages and 114 sheep. In March, the annual cattle census revealed that 4,239 head were grazing on the cattlewalk, a slight reduction on the previous year. Of this number, 2,266 were cows and 1,095 calves. The progeny of two Boran bulls, being used for upgrading cattle on the cattlewalk, continued to show considerable promise. One of the Friesian bulls introduced from Australia last year was transferred to Mauritius; the crossbred calf crop, resulting from these bulls showed promise. Additional bulls will have to be purchased. Pangola grass has become well established wherever it has been planted on the cattlewalk and rotational grazing trials have continued to show promise. The development of the lagoon islands was continued and, at the end of the year, approximately 5,000 Malayan Dwarf coconut seedlings had been planted on the islands of Coco, Sable, Crab, Gombrani, Plate and Chat. The 600 coconut palms of the Ceylon type, planted on Ile de Chat in 1959-60, flowered during the year and set fruit. 20 tons of acacia seed were harvested and the flocks of sheep on the islands of Gombrani, Chat and Crab rose from 78 to 114 head.

81. Demonstrations of gill net and shark fishing were conducted round the island; both methods of fishing have proved popular and two groups of large seine fishermen have surrendered their nets and replaced them with gill nets. A group of four young fishermen have started commercial shark fishing.

82. With the appointment of the Revd. Father H. Smith of the Holy Ghost Fathers in November, 1964, to take charge of the Agricultural Training Farm in Rodrigues, assisted by Brother Abelard Gross, it was possible to commence development of the Agricultural Training Farm, part of the capital and recurrent expenditure for which is being provided by the United Kingdom Committee, Freedom From Hunger Campaign. The farm was sited on the Marechal breeding centre and will absorb this centre.

83. In November, 1964, construction commenced on the presbytery and the first dormitory-cum-classroom was started in January. Dormitory accommodation is provided in each house unit for 16 to 18 boys with ablution facilities as well as a recreational-cum-dining section. By the end of 1966, there will be three house units. Later in the year, a chapel was built and equipped and a second house unit was commenced in November. This is being built by the trainees with the assistance of two carpenters and a mason. At the end of the year, the trainees were also occupied with the construction of their workshop and a loose box for calves, in addition to their normal routine farm work.

84. Eighteen trainees were selected from thirty-eight applicants and the agricultural training farm was officially opened on the 26th of July by the Magistrate and Civil Commissioner, Mr. Jacques Vallet, after the buildings

had been blessed by the Revd. Canon Ronald C. Gandy, head of the Roman Catholic Church in Rodrigues, who has always taken a keen interest in the project and who had also taken an active part in its planning.

85. As was to be expected in a new project of this nature, there were difficulties to be overcome. These have been surmounted by those concerned and not least by the boys themselves, who had to adapt themselves to what can be described as a new way of life, and by their parents who often had to deprive themselves of the assistance of their sons on their own farms, often a considerable sacrifice in a peasent farming community.

86. At the close of the year, it can be confidently stated that the agricultural training farm had been born, had survived its adolescence and was well on the way to becoming a study plant capable of achieving its objectives. It will undoubtedly require further care and assistance; it needs additional equipment but, if it continues to enjoy the energy and zeal of its Principal and his assistant and the goodwill of all Rodriguans, it is assured of playing a vital role in the agricultural development of the island.

87. No visits were paid to the Lesser Dependencies. The excision from this group of Diego Garcia was announced. It will form the nucleus of the British Indian Ocean Territories.

88. Very satisfactory progress has been made by the United Nations Special Fund Project surveying the land and water resources of the island, which became operational on the 4th of January. All experts and counterparts became available as required save for the Hydrologist and Draughtsman counterparts, owing to difficulties of recruitment. Equipment has come forward generally on time. Office accommodation has been supplied by the Department and whatever assistance was required by the project from time to time was supplied.

89. Of necessity, the project team has been occupied with the collection and analysis of physical data, the evaluation of existing land and water use and hydrological investigations. Potential irrigation developments and water storage sites were examined. New stream gauging stations were established and the photographic flying of part of the island was completed for the production of aerial maps.

90. A detailed preliminary study of a potential irrigation land settlement scheme for the dry south-west corner of the island, from Le Morne to Black River, was commenced and considerable work had been done on this scheme by the end of the year.

91. Two consultants visited the project to advise on water legislation, water administration and organization and on the present use of forest lands; to assess forest requirements and propose future forest policy.

II. Boards and Committees

92. The Director of Agriculture or his representative served on the following boards and committees:

Agricultural College Advisory Board.
Agricultural Marketing Board
Board of Agriculture, Fisheries and Natural Resources
Board of Examiners of the College of Agriculture
Board of Examiners for the Registration of Agricultural Chemists
Cane Release Committee
Comité de Collaboration Agricole Maurice—Réunion—Madagasikara
Customs Tariff Advisory Board
Cyclone and Drought Insurance Board
Fisheries Committee
Government Sack Factory Board
Irrrigation Committee
Land Acquisition Board
Land Settlement Committee
Malaria Advisory Board
Mauritius Sugar Industry Research Institute Executive Board
Mauritius Sugar Industry Research Advisory Committee
Sugar Industry Rehabilitation Fund Committee
Sugar Industry Reserve Fund Committee
Sugar Millers' Rehabilitation Fund Committee
Sugar Planters' Rehabilitation Fund Committee
Tea Control Board
Tea Manufacture (Sugar Millers) Ltd. Board
Tobacco Board.

III. Board of Agriculture, Fisheries and Natural Resources

93. The Board functions under Ordinance No. 29 of 1957. The following advisory committees were set up by the Board for specific purposes:

(a) The Cane Release Committee
(b) The Fisheries Committee
(c) The Irrigation Committee ...
(d) The Land Settlement Committee

94. The Board met on one occasion and heard a report from the Mauritius Sugar Industry Research Institute on the current position of the new virulent strain of gummosis on sugar-cane.

95. One meeting of the Cane Release Committee was held at which the cane variety M.39/48 was recommended for release for commercial cultivation.

A list of approved cane varieties for cultivation in 1965 was as follows:

M. 144/32	M. 253/48
M. 144/32 white	M. 442/51
M. 144/32 striped	Ebene 1/37
M. 112/34*	Ebene 50/47
M. 423/41*	B.H. 10/12*
M. 147/44†	B. 3337†
M. 3145	B. 34104†
M. 20246	B. 37161
M. 93/48	B. 37172

In order to implement the uprooting recommendations, occasioned by the susceptibility of these varieties to the virulent strain of gummosis, recommendations were made to Government for the amendment of Ordinance No. 69 of 1945.

96. The Fisheries Committee met once to consider a memorandum that had been submittted to them by the Fisheries Adviser in connection with the harm being done to fish stocks in the reserves by too frequent net fishing. The Committee recommended that in future large and canard net permit holders should only be authorised to fish in the reserves on one day only in each year and once only, on special permission to fish Mackerel when the fish migrate into the reserves.

97. The Irrigation Committee met on six occasions. For most of the year, irrigation water, at full dose, was available to planters. The Magenta canal was repaired as necessary throughout the year. Underground water from Pierre Fonds was pumped in to the La Ferme feeder canal. The Committee considered the increased changes brought in during the year and made representations to the appropriate Ministry for its reduction, on the grounds that it would seriously affect the economics of sugar-cane production in the Black River area. In the event, towards the end of the year, the new rates were withdrawn and the old rates re-applied. A request was considered for water from La Ferme for use in an aloe fibre factory. At the end of the year, the Committee had under consideration the possibility of an additional supply of 4½ cusecs being available for distribution.

98. The Land Settlement Committee met once to consider applications for the transfer of holdings and the selection of a candidate for one holding at Palmar.

IV. Mauritius Chamber of Agriculture

99. The Chamber of Agriculture continued to play its important role in the agricultural affairs of the island. Its representatives took part in the annual discussions in the United Kingdom in connection with the Commonwealth Sugar Agreement. It appointed a committee to administer the Sugar Industry Reserve Fund as well as nominated delegates to sit on numerous boards and committees. The work of this organisation was fully reported in its annual report.

---

* to be uprooted before the 31st December, 1969.
† to be uprooted before the 31st December, 1970.

V. Comité de Collaboration Agricole Maurice—Réunion—Madagasikara

100. The fourteenth annual meeting of the Comité took place in Mauritius from the 9th to 14th November. Six delegates from Réunion and five from Madagasikara attended. The Comité decided to continue the Fiji disease trials at Brickaville and Mauritius and Réunion will both continue to contribute the equivalent in francs of Rs 6,000 annually. In addition, Mauritius will continue to contribute Rs 13,000 per annum towards the cost of Fiji disease control in the port and vicinity of Tamatave. The co-operation of the Repubic of Madagasikara in carrying out this work which is of such great importance to Mauritius and Réunion is gratefully acknowledged.

101. Among the visits sponsored by the Comité in the three territories were the following which were of special interest to Mauritius:

(a) Visit by Mr. R. Antoine to Madagasikara;

(b) Visit by six third-year students, accompanied by two members of the staff of the Mauritius College of Agriculture to Réunion and Madagasikara;

(c) Visit by Mr. J. R. Williams to Réunion;

(d) Visit by Messrs J. D. de R. de St. Antoine and E. Piat to Réunion;

(e) Visit by Dr. P. O. Wiehe and R. Antoine to Madagasikara to attend a meeting of the Pathology sub-committee;

(f) Visit to Mauritius by Mr. Rodriguez from Madagasikara;

(g) Visit to Mauritius and Rodrigues by Mr. Chenet from Réunion;

(h) Visit to Mauritius by Mr. Rabetrano from Madagasikara;

(i) Visit to Mauritius by two staff and six students of the Agricultural College in Réunion.

VI. College of Agriculture

102. The Mauritius College of Agriculture is organised as a division of the Department. It provides trained scientists to meet the agricultural and sugar technology needs of the country. The administration of the College is assisted by both Advisory and Academic Boards. The demand for Diplomates exceeded the supply.

103. The teaching staff consisted of four lecturers and four assistant lecturers. Twenty-four part-time lecturers drawn from the Mauritius Sugar Industry Research Institute, other divisions of the Department and other Government Departments, lectured in Sugar Technology, specialised branches of Agriculture, Engineering and Meteorology.

Entrance Examinations and Scholarships

104. There were ninety-one applicants for admission to the Diploma courses. Of these, sixty-two sat for the entrance examinations and a record number of twenty-seven were admitted: eighteen to the Agriculture course and nine to Sugar Technology.

105. The two entrance scholarships were awarded to Messrs Gilbert Chaillet and Francis Masson and the Aimé de Sornay scholarship to Messrs. Gilles Gallet and Mahomed Goolam Hossen.

106. The one year course in Tropical Agriculture was resumed. Six students were admitted.

Student Body

107. The number and distribution of students were as follows:

Course	*1962*	*1963*	*1964*	*1965*
Full-time Diploma (3-year)	51	47	48	57
Full-time Certificate in Tropical Agriculture	—	—	—	6
Part-time Certificate in Cane Cultivation	16	17	18	25
Part-time Certificate in Sugar Analysis	—	11	9	7
Other Part-time	2	3	—	3
Total	69	78	75	98

Examination Results and Laureateships

108. The results of the annual examinations, held in March, were as follows:

	1964		*1965*	
	Sat	*Passed*	*Sat*	*Passed*
Diploma in Agriculture, 1st year	13	6	15	12
Diploma in Agriculture, 2nd year	5	5	6	6
Diploma in Agriculture, 3rd year	10	10	5	5
Diploma in Sugar Technology, 1st year ...	6	6	7	6
Diploma in Sugar Technology, 2nd year ...	9	9	6	6
Diploma in Sugar Technology, 3rd year ...	4	4	9	9
Certificate in Cane Cultivation	17	15	15	14
Certificate in Sugar Analysis	10	8	9	8

109. Of the four failures in the first year Diploma examination, two repeated the year and two left the College. Two students were awarded the Honours Diploma in Agriculture and one in Sugar Technology.

110. On the aggregate examination results for the whole course, Mr. K. F. Ng Kwai Hang and Mr. J. P. Harel were awarded the Agriculture and Sugar Technology laureateships respectively. Mr. Ng Kwai Hang is now reading Animal Husbandry at McGill University and Mr. Harel, Chemical Engineering at the Louisiana State University. Mr. Gaetan Lim Sow Tin, who was second in the Agriculture course, was awarded a special scholarship by the New Zealand Dairy Board to read Dairying at Massey University.

Visits of Students

111. Under the auspices of the "Comité de Collaboration Agricole Maurice-Réunion-Madagasikara", six third-year students, accompanied by two members of the staff, visited Réunion and Madagasikara in September. The return visit by a party of students from Réunion was made in July. In May, the third-year Agricultural Diploma students spent five days in Rodrigues.

University of Mauritius Project

112. The University of Mauritius Project was initiated, the necessary Ordinance was passed and a Provisional Council set up. The College of Agriculture is expected to form the nucleus around which the new university will be built.

Presentation of Awards

113. His Excellency the Governor presented the Diplomas and Prizes on the 10th November. The Honourable the Minister of Agriculture and Natural Resources spoke on the opportunities that will be available to the Graduates and Diplomates of the New University. After reviewing the year's work, the Principal stressed the importance of wide reading to supplement classwork and of developing an enquiring mind and a scientific outlook.

Advisory and Academic Boards

114. The Advisory Board met once and the Academic Board four times; examination papers and results were discussed and the regulations and curricula reviewed in the light of experience.

VII. Arbitration and Control Board

115. The Arbitration and Control Board operated under the Sale of Canes (Control) Ordinance. The executive machinery of the Board was run as a division of the Department.

Meetings of the Board

116. The Board held twenty-two meetings during the year as follows:
1 meeting in connection with the assessment of sugar to planters;
1 meeting in connection with cane testing;
4 meetings in connection with the refund of transport costs to planters;
4 meetings in connection with the changes of delimitation of factory areas;
2 meetings in connection with the closing down of weighbridges;
4 meetings in connection with the fertiliser value of molasses;
4 meetings in connection with the protests against assessment of sugar;
2 meetings in connection with the installation of automatic weighbridges.

Cane Testing

117. The number of tests carried out on the canes supplied by 253 planters or groups of planters and 129 miller-planter estate sections totalled 25,835. The tests were carried out at 22 factories. The corresponding figures for the 1964 crop were 19,936 tests in respect of 252 planters or groups of planters and 131 miller-planter estate sections, supplying canes to 22 factories.

Assessment of Sugar

118. Following the publication of the figures of the final assessment of sugar to planters for the 1964 crop, four co-operative credit societies and six planters lodged protests against the awards made by the Board. All the protests were considered by the Board and various measures were decided upon to remove the causes of complaint. However, in no case was the assessment varied. Four co-operative and three planters withdrew their protests.

Cost of Production

119. Questionnaires were forwarded to fifty planters, selected according to the weight of cane produced and to twenty-three sugar estates with factories to secure the data necessary for the computation of the costs of production.

Transport Costs

120. Prior to the crop, a schedule of rates of transport was forwarded to sugar estates with factories showing the maximum rate claimable by millers for the transport of planters' canes from the various outlying weighbridges to the factory in each factory area.

121. The schedule was based on the following formula for transportation by road:

$$C = Rs\ (2.35 + 0.21m)$$

where 'C' is the cost of transport per ton of cane and 'm' the number of miles over which transport is effected.

122. According to law, the transport of planters' cane by millers by light railway is claimable at the road rate and limited to the cost of transport over a maximum of four miles. Millers reimburse planters for expenditure incurred in the transport of their cane over distances in excess of four miles at a rate fixed by the Board of Re 0.21 per ton /mile.

Delimitation of Factory Areas

123. Five applications for changes of delimitation of factory areas were received; all were either rejected or not entertained.

Permits to Middlemen

124. Permits were issued to forty-six middlemen for the crop.

Complaints against Middlemen

125. There were thirty-seven complaints against middlemen by planters. The disputes were settled between the parties concerned in the presence of an officer of the Board. Since the Sale of Canes (Control) Ordinance, 1964, came into force, middlemen are compelled to keep records of their transactions with planters in a standard form, approved by the Board. Instructions were issued to middlemen accordingly and their books were subsequently examined to make sure that they complied with the instructions they had received.

Cane Contracts

126. There were 17,961 contracts registered. The total number of contracts in force was 19,975 covering some 26,000 planters.

Breach of Sale of Canes (Control) Ordinance

127. Five cases of breach of Sale of Canes (Control) Ordinance were reported to the Police.

128. The number of planters who failed to enter into contract before the 31st of May totalled 1,101. In 1964, before the new Ordinance came into force, the closing date was the 30th June and the number of planters who had failed to enter into contract in due time was 148.

Cane Varieties

129. During the year under review, the varieties approved for planting were the following: M.134/32 (together with its white and striped sports), M.112/34, M.423/41, M.147/44, M.31/45, M.202/46, M.93/48, M.253/48, Ebene 1/37, Ebene 50/47, B.H.10/12, B.3337, B.34104, B.37161, B.37172.

Control of Cane Weighbridges

130. The number of weighbridges in operation was 116, compared with 118 in 1964, two having closed down with the Board's approval. All the weighbridges were tested for accuracy prior to the crop and found correct on first examination. They were tested again in October and were all found to be correct.

Surprise Checks carried out at Weighbridges during the crop

131. During the crop, 619 surprise checks were carried out and 462 vehicles were re-weighed (109 carts and 353 lorries). In three cases the weighing was found to be incorrect. Two weighers were prosecuted and a warning was issued to the third.

VIII. The Sugar Industry

Crop Results

132. The total area under cane was 207,000 arpents of which 194,000 arpents were reaped, compard with 206,937 and 195,411 respectively for 1964. During the year, the crop did not suffer any noticeable damage from cyclonic winds. In early May, tropical depression ' Rose ' passed by the island with wind gusts not exceeding 60 miles per hour. During the growing season, climatic condtions were generally favourable to vegetative growth and high sugar-cane yield. The maturation period was characterised by abnormal rainfall and temperatures unfavourable to sugar production. As a result, a record crop of cane was harvested but the production of sugar was disappointing and fell short of the record by some 21,000 metric tons. The production of sugar amounted to 664,402 metric tons compared with 519,900 in 1964 and 685,500 in 1963, the latter being the record. The yield of sugar per arpent was 3.42 metric tons, compared with 2.66 in 1964. The average crushing rate was 100.6 metric tons per hour, compared with 95.4 in 1964; the average daily crushing rate was 2,040 metric tons, compared with 1,904 metric tons in 1964.

Cane Varieties

133. In order of importance, the main varieties making up the 1964 crop were the following: M.147/44, M..93/48, E.1/37, M.202/46 and B.37172. The above mentioned varieties accounted for about 72 per cent of the crop and the remaining 28 per cent was made up of E.50/47, B.3337, M.134/32, M.31/45, M.253/48, M.442/51 and other varieties.

Quotas and Prices

134. The negotiated price quota for the calendar year 1965 under the Commonwealth Sugar Agreement was 380,000 long tons at the negotiated price of £46-11-6d per ton, compared with the 1964 price of £46-0-10d per ton for 368,500 long tons. The other sugars exported, amounting to 180,442 long tons, were sold on the free market. A total of 560,442 long tons of sugar were exported and 27,871 long tons were consumed locally.

Sugar Exports

135. The exports of sugar were as follows:

Destination	*Long Tons*	
	1964	*1965*
United Kingdom	416,723	381,020
Canada	134,881	95,649
Republic of South Africa ...	—	41,180
Hong Kong	—	9,350
Italy	9,989	—
Malaysia	5,000	19,643
U.S.A.	—	13,600
Total	566,593	560,442

Molasses and Alcohol

136. The production of molasses amounted to 151,152 metric tons. During the year 105,360 metric tons of molasses were exported; in the exports are included 24,096 tons of molasses carried over from the 1964 crop. About 8,000 tons of molasses were used in the manufacture of rum and various other alcoholic products and the balance was applied as fertilizer. The total production of alcohol, reduced to 100°G.L., was about 1,486,000 litres, the greater part of which was used locally as rum, denatured spirit and in the manufacture of vinegar. 18,614 litres were exported.

Mauritius Sugar Industry Research Institute

137. The Institute continued to provide the research services for the industry and undertook extension work amongst the larger farmers. The Department of Agriculture was responsible for extension work amongst small cane farmers. Throughout the year, close liaison was maintained between the staff of both organisations and the research findings of the Institute were thus made fully available to the small farmer. The work of the Institute is fully recorded in its annual report.

The Sugar Industry Rehabilitation Fund

138. This fund, together with the Sugar Millers' Rehabilitation Fund and the Sugar Planters' Rehabilitation Fund, continued to serve the industry. The latter fund operated the Mechanical Pool and the Cane Nursery at Pointe-aux-Sables and, in co-operation with the industry, established subsidiary cane nurseries in certain factory areas. Unfortunately small planters did not take advantage of the planting material made available to them at the subsidiary nurseries. The nurseries supply disease-free planting material and cuttings of newly released varieties to planters while the Mechanical Pool supplies heavy tractors with equipment for the clearing and de-stoning of land.

IX. Tea Industry

Tea Control Board

139. The Board which was established under the Tea Industry Control Ordinance (Ordinance No. 29 of 1959), as amended by Ordinance No. 29 of 1961 and Ordinance No. 37 of 1963, held regular meetings throughout the year. It was mainly concerned with the control of the weight and the storage of made tea in factories, the allocation of quotas for the sale of tea on the local market, the re-licensing of Mare Anguilles tea factory and the possibility of reducing freight charges on tea exported to the United Kingdom. As in previous years, it continued to press for improvements in the standard of leaf production and manufacture. It also continued the "Drink More Tea" campaign. The Board was handicapped by shortage of staff, the post of Executive Assistant being vacant throughout the year.

Statistical

140. The Board continued the issue of its quarterly and annual statistical reviews.

Managing Agency

141. "La Chartreuse Tea Marketing Co-operative Society Ltd." continued to act as Government's Managing Agents in respect of Chartreuse tea factory but relinquished the control of Midlands tea estate at the end of March, which estate reverted to direct Government control. During the course of the year, work was completed on the extension of Chartreuse tea factory which raised its capacity from 750,000 lbs of made tea per annum to 1,500,000 lbs of made tea per annum. Leaf production from Midlands tea estate was 954,979 lbs of green leaf which was again lower than in the previous year. This decrease was partly due to a total strike on the part of field labour in January, immediately following the New Year holiday, which resulted in there being no plucking for eleven days, at the very peak of the crop season. As a result of this strike, practically the whole estate had to be cut across and re-levelled and normal plucking rounds had not been resumed by the time the estate reverted to Government control at the end of March. Leaf output was also below expectations at the end of the year, partly on account of the unseasonably cold weather experienced in November and partly on account of various interruptions in the plucking cycle when the estate was distributed as smallholdings in December.

Climate

142. In general, the year was favourable to the production of tea although temperatures were particularly low over the period June to September and again in November. Rainfall of 148 inches as measured at the tea experiment station, was slightly in excess of average, the months of July, August and September being particularly wet, although cold.

Tea Factories

143. With the exception of Mare Anguilles all factories continued in operation. Nouvelle France factory commenced a further extension to provide room for additional withering troughs. Bois Chéri factory installed a skip fermenting unit and also extended its boiler house, to provide addi-

tional power for drying and withering. As previously recorded, the extension of Chartreuse factory from three-quarters to one and a half million pounds of made tea capacity was completed. Work was commenced on the modernisation of Mare Anguilles factory by the building of a withering house equipped with troughs and the installation of a triturator and C.T.C. machinery.

Mauritian Tea

144. Production rose by 758,815 lbs over last year's production and was 572,457 lbs higher than the previous best year, namely 1963. The total production for the year was 3,829,348 lbs. As in previous years, approximately one-third of the production was consumed locally, the remainder being exported. The prices of Mauritian tea on the London market showed a substantial improvement. 17,975 chests were sold at an average price of 3s.8.32d per lb compared with 14,143 chests at 3s.5.35d per lb in 1964; 35,735 lbs were offered for sale at the Nairobi auctions and the sale of tea, by private treaty, continued on a limited scale.

Development Project

145. The Tea Development Project, which was commenced in 1956, was designed to develop 3,000 arpents of new land under tea. As a result of representations from the participating planters in 1963, the scheme was extended for a further two years to June, 1965, owing to the setbacks suffered during the cyclones of 1960 and subsequent cyclones. By the end of the year, planters on private land under the scheme had planted 212 arpents and those on Crown Land 1,854 arpents, Government having planted 289 arpents as its contribution to the scheme. There was therefore a total of 2,355 arpents planted under this project. A further 156 arpents, the balance of the 289 arpents planted by Government were distributed as 33 smallholdings of about 5 arpents each (4 arpents of tea). Midlands tea estate, which reverted to Government in March, was also distributed as 136 smallholdings. In both cases, the areas were initially leased to Co-operative Societies for sub-leasing to individual tenants, thereby enabling the tenants to obtain short term loans from the Co-operative Central Bank.

New Development Project

146. Work proceeded satisfactorily on the New Development Project which presently envisages the planting of 500 arpents of tea per year by Government for distribution, when fully established, as smallholdings. By the end of the year, 2,419 arpents had been contour-surveyed, 2,149 arpents cleared, 1,616 arpents prepared for planting and 1,554 arpents planted. 47 arpents planted under this scheme were distributed as smallholdings.

Tea Seed

147. 37,000 lbs of first grade tea seed were imported from Tanzania and 23,000 lbs from Malawi. The harvest from the local seed gardens, which were seriously affected last year by cyclone 'Daniele' amounted to 8,280 lbs. The total area under cultivation as seed gardens was 69 arpents; this includes 9 arpents of seed gardens, in bearing, taken over with Midlands estate. Of these 69 arpents, only some 30 arpents were in bearing.

Tea Experiment Station — Wooton

148. Climatic conditions, as already stated, were reasonably favourable to leaf production. The leaf harvest for the tea crop year 1964/65 (July-June) amounted to 343,872 lbs which was a record, being nearly 100,000 lbs higher than in the previous best year. The comparative yields of green leaf from the 70 arpents in bearing at Wooton for the past three crop years are given below:

Month	1962–63		1963–64		1964–65	
	lbs	%	lbs	%	lbs	%
July	128	0.050	3,597	1.500	2,919	0.848
August	—	—	—	—	3,592	1.044
September	—	—	478	0.200	8,108	2.357
October	141	0 058	34,303	14.312	28,720	8.352
November	20,504	8.394	22,826	9.523	31,972	9.298
December	31,880	13.050	35,863	14.962	53,550	15.573
January	48,513	19.858	30,289	12.633	53,982	15.698
February	43,756	17.911	36,222	15.112	52,353	15.224
March	40,084	16.410	30,033	12.529	47,929	13.941
April	34,333	14.053	31,925	13.319	34,422	10,010
May	21,966	8.992	7,944	3.315	17,673	5.139
June	2,992	1.224	6,220	2.595	8,652	2.516
Total ...	244,297	100.000	239,700	100.000	343,872	100.000

Average yield of Green Leaf in lbs per arpent

1962–63	1963–64	1964–65
3,503	3,437	4,931

149. Yields in the first six months of the present season 1965/66 show a slight increase on those of last season.

150. The observation trials on various rooting media for tea cuttings in the mist propagator, as reported last year, indicate that a mixture 1:1:1 of rock sand, well-rotted compost and resinless sawdust gave the best results. "Verigro" Vermiculate, either alone or mixed with equal quantities of rock sand, also gave very good results but was expensive. It was observed that cuttings rooted in the ordinary mixture, rock sand/compost/sawdust, produced better growth when planted out than those rooted in other media. Trials with peat and hop manure, imported from the United Kingdom gave very poor results.

151. The clone 1H continues to show itself as the best all round clone so far observed. Selection work continued.

152. The construction of a second green house to accommodate a further mist propagator and an hardening-offshed equipped with a "Mac Penny" weaning unit, was completed. At the end of the year, neither of these additional units had been put into operation owing to difficulties in obtaining electrical and water supplies.

153. It is now possible to give the first report on a pruning experiment which has been in operation since May, 1962, on tea planted from seed from the following sources:

(a) local jat planted in May, 1951, at $3\frac{1}{2}' \times 2\frac{1}{2}'$ spacing;
(b) Nyasaland jat planted in July, 1952, at $3\frac{1}{2}' \times 2\frac{1}{2}'$ spacing;
(c) Malayan jat planted in July, 1953, at $3\frac{1}{2}' \times 2\frac{1}{2}'$ spacing.

These three different jats have been subjected to six different pruning treatments:

(1) Annual clean prune, in early May each year.

(2) Annual clean prune, in late August each year.

(3) Bi-annual clean prune, in early May, with a light skiff in early May in the intervening year.

(4) Bi-annual clean prune, in late August, with a light skiff in late August in the intervening year.

(5) Tri-annual clean prune, in early May, followed by a light skiff in early May of the next year and a deep skiff in early May of the following year.

(6) Tri-annual clean prune, in late August, followed by a light skiff in late August of the next year and a deep skiff in late August of the following year.

The treatments were randomised in 4 blocks and each plot consisted of 7 rows of 22 bushes. The mean yield in lbs per arpent for the 3 years (i.e. the whole cycle 1962/63, 1963/64, 1964/65 is summarised as follows:

Jats	*Treatments*					
	1	*2*	*3*	*4*	*5*	*6*
Local	19'500	16,800	20,300	20,500	19,400	17,600
Nyasaland	16,000	14,350	17,800	16,700	18,450	17,800
Malayan	20.650	18,000	20,450	16,050	23,050	18,000
TOTAL ...	56,150	49,150	58,550	53,250	60,900	53,400

It will be noted that over the aggregate for the whole trial, treatment 5 gives the highest yields. However, with the local jat treatments 3 and 4 give slight better yields than treatment 5. It is significant that, in each type of treatment, the early pruning gave better results than the later prune. This experiment will be continued for a second pruning cycle which will end in 1968.

154. A 3^3 factorial experiment was laid out in October, 1963, in a single replication with NPK confounded at the following levels:

N	*P*	*K*		
0	0	0	lbs per arpent	N in the form of sulphate of ammonia
40	23	30		P as double superphosphate (42% P_2O_5)
80	45	60		K as Muriate of Potash

The field in which this experiment was conducted was hedge planted at $5' \times 2' \times 1\frac{1}{2}'$ spacing in July, 1955, with Malayan jat seed. The application of fertilizer was made in October each year.

155. The table below gives the results of 31 plucking rounds made between 27th November, 1964, and 27th September, 1965.

	P0	*P1*	*P2* (±151.4)	*K0*	*K1*	*K2* (±87.6)	*means*	
N0 ...	4655	4440	4316	4365	4404	4642	4470	lbs
N1 ...	4976	4607	4944	4717	4836	5047	4867	per
N2 ...	4682	4743	4594	4576	4761	4682	4673	arpent
means ...	4771	4597	4618	4553	4667	4790	4670	
± 87.6							± 50.6	

Significant difference between means at 5%P=264 lbs per arpent. There has been a significant increase in yield due to nitrogen. The response to phosphate and potash has not however reached a level of significance. The experiment will be continued for several years to see if, in the long term, significant response to P and K is obtained.

156. A fertilizer trial was laid out in field 1A in 1964 with the object of finding out the fertilizer requirements of mature tea to obtain maximum yields. The field was planted in January, 1950, with Malayan jat seed at $3\frac{1}{2}' \times 2\frac{1}{2}'$ spacing. The NPK mixture employed in this experiment consisted of 3:1:1 mixture by weight of Sulphate of Ammonia, double super phosphate, (42% P_2O_5) and Muriate of Potash.

The treatments were:

T1 = 400 lbs of mixture per arpent
T2 = 600 do
T3 = 800 do
T4 = 1,000 do
T5 = 1,200 do

Applications were made on the 2nd October, 1964. Plucking started on the 19th October, 1964, and 32 plucking rounds were made up to the end of June, 1965.

157. The main yields of green leaf in lbs per arpent were:

T1 = 5,487 lbs of green leaf per arpent
T2 = 5,819 do
T3 = 5,940 do
T4 = 6,394 do
T5 = 6,759 do

L.S.D. for P = .05 = ± 563.8 lbs per arpent
L.S.D. for P = .01 = ± 790.5 do
L.S.D. for P = .001 = ± 1116.9 do

158. A similar experiment to the above was carried out in field 1B on tea of the same jat and same spacing but planted in April, 1953, save that a split application of an NPK fertilizer was made. The first application was applied in early October and the second in early January. The mean yields of green leaf in lbs per arpent were:

T1 = 4,167 lbs of green leaf per arpent
T2 = 4,299 do
T3 = 4,366 do
T4 = 4,474 do
T5 = 4,648 do

L.S.D. for P = .05 = ± 106.16 lbs per arpent
L.S.D. for P = .01 = ± 148.24 do
L.S.D. for P = .001 = ± 210.37 do

159. A further experiment to test the relative merits of the 5 different fertilizer treatments was laid out in September, 1964, in field 1B on Malayan jat tea planted in April, 1953, at $3\frac{1}{2}' \times 2\frac{1}{2}'$ spacing. In this experiment there were 5 plots with 5 treatments randomised. Each plot consisted of 5 rows of 20 bushes. The treatments were:

T1 = No fertilizer

T2 = 400 lbs of sulphate of ammonia per arpent

T3 = 400 lbs of sulphate of ammonia per arpent +
100 lbs of Double Super Posphate per arpent

T4 = 400 lbs of sulphate of ammonia per arpent +
100 lbs of Muriate of Potash per arpent

T5 = 400 lbs of sulphate of ammonia per arpent +
100 lbs Double Super Phosphate per arpent +
100 lbs of Potash per arpent

Plucking commenced on the 21st October, 1964, and 30 plucking rounds were made to the end of June, 1965. The mean yields of green leaf in lbs per arpent were:

T1 = 4,711
T2 = 5,191
T3 = 4,729
T4 = 5,253
T5 = 4,871

L.S.D. for P = .05 = ± 395.5 lbs per arpent
L.S.D. for P = .01 = ± 554.5 lbs per arpent

Treatments 2 and 4 were significant. Nitrogen in combination with potash had a beneficial effect on yields; phosphate again showed no response.

160. It should, however, be noted that, in respect of the foregoing fertilizer experiments, all have been carried out on areas that had previously been under normal management, except in the immediate preceding year, receiving routine NPK applications each year.

161. An experiment was laid down during the season 1964/65 to determine the relative merits of the four main varieties of tea planted at Wooton. Three comparisons were made: (1) total yields per arpent, (2) susceptibility to the production of " banjhi " growth, (3) quality of made tea. The results of these comparisons are given below:

(1) *Yield of green leaf in lbs per arpent in 1964/65*:

(a) Local jat — 6,955 lbs from field 5A planted in May, 1951, at $3\frac{1}{2}' \times 2\frac{1}{2}'$ spacing;

(b) Nyasaland — 3,349 lbs from field 5B planted in July, 1952, at $3\frac{1}{2}' \times 2'$ spacing;

(c) Malayan — 4,130 lbs from field 5C planted in July, 1953, at $3\frac{1}{2}' \times 2'$ spacing;

(d) Special Assam — not recorded as less than 1 arpent planted.

(2) *" Banjhi "* —Counts were made once every fortnight from April to July of the number of " banjhi " shoots produced in 500 grams of plucked leaf of each jat and the following figures were obtained:

	Local	*Nyasaland*	*Malayan*	*Special Assam*
16th April				
Total number of shoots ...	955	892	739	811
Number of " banjhi "	525	425	374	141
Percentage of " banjhi " ...	55	47.6	50.6	17.4
30th April				
Total number of shoots ...	1075	633	851	745
Number of " banjhi "	440	173	435	175
Percentage of " banjhi " ...	41	27.3	51	23.5
14th May				
Total number of shoots ...	1063	603	869	694
Number of " banjhi "	278	53	370	113
Percentage of " banjhi " ...	26	9	42.5	16.3
29th May				
Total number of shoots ...	736	742	724	530
Number of " banjhi "	382	546	222	60
Percentage of " banjhi " ...	52	73.5	30.6	11.3
16th June				
Total number of shoots ...	1021	743	964	841
Number of " banjhi "	309	320	463	438
Percentage of " banjhi " ...	30	43	48	52
1st July				
Total number of shoots ...	763	731	717	577
Number of " banjhi "	192	310	215	264
Percentage of " banjhi " ...	25	42	30	46
15th July				
Total number of shoots ...	935	840	863	734
Number of " banjhi "	168	247	287	223
Percentage of " banjhi " ...	18	29.4	33	30.4
30th July				
Total number of shoots ...	1051	880	723	732
Number of " banjhi "	154	98	349	159
Percentage of " banjhi " ...	14.6	11.1	48.2	21.7

(3) *Quality of Made Tea*

Based on the tea tasters reports on the quality of tea made in the laboratoy with Pizey roller:

In April

Malayan Jat—Black with some tip. The liquor is light and greenish but is fairly bright with some quality.

Special Assam—More tip than Malayan Jat but less black. The liquor has quite good strength and colour with fair quality.

Nyasaland—Black with a little tip. The liquor is coloury but soft and dull.

Local—A fair show of tip and blackish. The liquor is bright with attractive quality but is light.

In May

Malayan Jat—Very light, green but some quality.

Special Assam—Coloury strong with fair quality but greenish.

Nyasaland—Fair colour and strength, greenish but quite good quality.

Local—Coloury with very useful pungency and quality. Some flavour.

In June

Malayan Jat—Good colour and quality with pungency.

Special Assam—Strong and coloury but not brisk enough.

Nyasaland—Good quality with briskness but a little lacking in body.

Local—Similar to Special Assam but a shade brighter.

In July

Malayan Jat—Bright with good quality and briskness.

Special Assam—Good quality with pungency.

Nyasaland—Bright with good quality but light.

Local—Good quality and pungency with useful strength and colour.

162. From this experiment it would seem that the local jat (China hybrid type) is at Wooton the highest yielder and has the best tea making qualities although it has tendency to produce "banjhi" growth. These tests will be continued.

163. A weed control trial on nursery beds with Simazine 50/W at the rate of 2, 3, 4 lbs per arpent was carried out on beds prior to sowing tea seed. From an eye score made in December, four months after the date of application, the control achieved by the weedicide as compared with an untreated bed considered as 100 per cent weedy was:

Simazine at the rate of 2 lbs per arpent suppressed 25-50 per cent of the weeds

Simazine at the rate of 3 lbs per arpent suppressed 50-80 per cent of the weeds

Simazine at the rate of 4 lbs per arpent suppressed 60-90 per cent of the weeds

164. An NPK factorial 3^3 trial on young tea planted in nurseries showed a marked response to phosphate and potash during the first six months of growth.

165. A 3^3 NPK factorial trial on *Tephrosia* was laid down. Preliminary observation showed clearly that, in the absence of phosphate, *Tephrosia* did not survive for more than six to eight weeks.

166. Experiments on the storage of tea seed and the effect of heat treatment on the viability of tea seed was investigated. There was some indication that tea seed could be stored at Wooton during winter, for up to four months, without serious loss of viability. Preliminary observation showed that the use of clear plastic, as a cover for germinating beds, had a distinct advantage in increasing the rate of germination of tea seed during the winter months.

167. The number and acreage of the tea plantations were as follows:

Total number of plantations	476	
	Arpents	
Aggregate area	6,312.0	
Area of mature plantations (approx.) ...	2,836.2	(over 10 years old)
Area in partial bearing (approx.) ...	1,648.9	(3–9 years old)
Area not in bearing (approx.)	1,826.9	(under 3 years old)

Extent (arpents)	*Aggregate area (Arpents)*	*% of total area*	*Number of plantations*	*Average size (Arpents)*
0 to less than 5 ...	673 6	10.7	414	1.6
5 to less than 25 ...	277.3	4.4	28	9.8
25 to less than 100 ...	982.8	15.6	17	57.7
100 and above	4,378.3	69.3	17	257.5
TOTAL ...	6,312.0	100.0	476	13.2

The largest plantation under single management was just under 900 arpents. There were 68 plantations of under one arpent.

PRODUCTION

168. Mauritius produced 3,829,348 lbs of black tea in 1965. The output of factories over the past five years was as follows:

Factory	*1961 lbs*	*1962 lbs*	*1963 lbs*	*1964 lbs*	*1965 lbs*
Bois Chéri	959,233	861,731	1,086,548	937,143	1,279,416
La Flora	689,829	774,650	806,447	839,524	865,739
Usine Corson	426,365	426,803	534,996	514,681	578,367
Pont Colville	235,423	237,793	291,190	241,495	210,372
Nouvelle France	208,310	148,620	105,713	226,921	315,862
Chartreuse	230,215	266,892	431,997	310,769	579,592
Mare Anguilles	59,659	83,138	—	—	—
TOTAL ...	2,809,034	2,799,627	3,256,891	3,070,533	3,829,348

169. The total export to all destinations was 2,434,605 lbs at a value of Rs 5,857,881 which compared with previous years as under:

Destinations	*1961 lbs*	*1962 lbs*	*1963 lbs*	*1964 lbs*	*1965 lbs*
United Kingdom ...	1,732,329	1,582,881	2,150,257	1,697,691	2,346,135
South Africa	2,443	977	6,482	6,158	18,948
New Zealand and Australia ...	426	—	—	—	—
Other Commonwealth Countries ...	11,432	—	—	—	—
Madagasikara and Reunion ...	210	—	1,841	3,688	5,408
Western Europe ...	—	5,358	—	—	—
United States of America	—	—	16,902	—	—
Seychelles ...	—	—	11	—	—
Comoro Islands ...	—	—	—	93	—
Kenya	—	—		17,548	23,444
Malaysia	—	—	—	—	756
West Germany ...	—	—	—	—	9,975
Ireland	—	—	—	—	27,670
Canada	—	—	—	—	2,269
TOTAL ...	1,746,840	1,589,216	2,175,493	1,725,178	2,434,605

170. Imports of tea were as follows:

Country	1961 lbs	1962 lbs	1963 lbs	1964 lbs	1965 lbs
China	7,327	10,190	8,668	11,130	13,348
Hong Kong	2,985	3,320	2,412	1,978	421
Ceylon	9,046	5,095	1,466	494	942
India	478	—	705	9	238
Formosa	—	—	736	—	—
United Kingdom ...	—	—	—	1,129	511
Kenya	—	—	—	8,129	—
Japan	—	—	—	—	970
Other Countries ...	1,567	1,065	—	—	—
TOTAL ...	21,403	19,670	13,988	22,869	16,430

X. Tobacco Industry

171. Production of cured tobacco was limited to the estimated requirements of local cigarette manufacturers, British-American Tobacco Co. (Mauritius) Ltd. and Amalgamated Tobacco Corporation (Mauritius) Ltd. The industry is controlled by a Board which publishes annually a full report on the industry.

CROP CONDITIONS

172. Weather conditions were very variable throughout the year, High atmospheric humidity at harvest and at curing resulted in an increase in yield and a lowering of the quality of leaf of Amarello air-cured tobacco. The average return per arpent of Amarello air cured was slightly higher than in the preceding year. Cool weather during the growing period of Virginian flue-cured tobacco affected the yield considerably, although the quality of the tobacco was slightly better than in 1964. The result was a lower average return per arpent. In the case of Burley, the yield per arpent was the same as in the preceding year but the quality of the tobacco produced was slightly lower, owing to high atmospheric humidity at curing.

173. Leaf spot diseases, Frogeye and *Alternaria,* appeared in a few plantations towards the end of the crop. Powdery mildew was severe in the first season Virginian plantations in Black River and was comparatively slight in some Virginian plantations in the second season. There was little evidence of mosaic and of the vector-borne virus complex reported in the past two years. A high incidence of Granville wilt was observed in a field at l'Etoile, Flacq, which had grown tobacco in 1964. Root knot nematodes were not a problem save in some plantations of Virginian varieties in sandy soil at Belle Mare, Flacq.

174. In some localities, aphids were more abundant than in 1964, while the incidence of caterpillars was similar.

PERMITS

175. The number of permits issued for the planting of tobacco in 1965, compared with that of the previous year, was as follows:

	1964 (arpents)	1965 (arpents)
Flue-cured Virginian	386	813
Air-cured Amarello	120	99
Burley	14	17
TOTAL	520	929

Permits for a larger acreage were issued. The increase in acreage for flue-cured Virginian was mainly due to increased demand by the local cigarette manufacturers, following the switch-over in demand from Amarello cigarettes to Virginian cigarettes.

Production

176. The production of tobacco in 1965, compared with 1964, was as follows:

	1964		*1965*	
	Arpents	*Kgs*	*Arpents*	*Kgs*
Flue-cured Virginian ...	382	192,192	813	354,737
Air-cured Amarello ...	116	127,273	99	122,009
Burley	13	5,437	17	7,111
TOTAL ...	511	324,902	929	483,857

Yields and Returns

177. The yield of leaf and the financial return to growers of flue-cured Virginian were lower than in 1964, while the yield of leaf and the financial return to growers of Amarello air-cured was higher, the higher yield of Amarello air-cured compensating for the poorer quality of the tobacco produced. The yield of leaf to growers of Burley was the same as in 1964, but the financial return was lower due to the poor quality of the leaf produced.

	Average yield per arpent	
	1964	*1965*
	kgs	kgs
Flue-cured Virginian	503	436
Air-cured Amarello	1,097	1,232
Burley	418	418

	Average return per arpent	
	1964	*1965*
	Rs	Rs
Flue-cured Virginian	3,649	3,208
Air-cured Amarello	2,852	2,897
Burley	1,080	1,011

	Average value per kg	
	1964	*1965*
	Rs	Rs
Flue-cured Virginian	7.25	7.35
Air-cured Amarello	2.60	2.35
Burley	2.58	2.42

Quality

178. The quality of the flue-cured and air-cured tobaccos produced was lower than in 1964, particularly the air-cured.

Year	*Percentage of Bright and Medium grades*				
	1961	*1962*	*1963*	*1964*	*1965*
Flue-cured	70	90	91	91	89
Air-cured	23	24	32	34	12

Local Manufacture

179. The manufacturers' purchases and usings of domestic and imported leaf were as follows:

1965–Purchases	*Domestic*	*Imported*	*Total*	% *Total Imported*	*C.I.F. Value per kg.* *Imported*	*Domestic*
	Kgs	Kgs	Kgs		Rs	Rs
B.A.T. Co. Mts. Ltd ...	337,308	108,895	570,267	19	10.11	6.39
A.T.C. Mts. Ltd ...	124,064					8.20
Total ...	461,372	108,895	570,267	19	10.11	6.86

1965–Usings	*Domestic*	*Imported*	*Total*	% *Total Imported*	*C.I.F. Value per kg.* *Imported*	*Domestic*
	Kgs	Kgs	Kgs		Rs	Rs
B.A.T. Co. Mts. Ltd ...	376,982	95,515	472,496	20.2	—	—
A.T.C. Mts. Ltd ...	108,335	5,546	113,882	4.9	—	—
Total ...	485,317	101,061	586,378	17.2	—	—

1964	*Domestic*	*Imported*	*Total*	% *Total Imported*	*C.I.F. Value per kg.* *Imported*	*Domestic*
	Kgs	Kgs	Kgs		Rs	Rs
Purchases	410,004	117,096	527,100	28.5	10.27	6.14
Usings	462,294	136,052	598,798	22·8	—	—

180. The percentage of imported leaf used in manufacture decreased by 5.6 per cent in 1965, compared with 1964, as illustrated in the following table.

	Year						
	1959	*1960*	*1961*	*1962*	*1963*	*1964*	*1965*
% Imported	18.6	23.9	24.9	24.3	20.8	22.8	17.2

These figures indicate that usings of domestic leaf increased as compared with the previous year. This increase is due to the duty on imported leaf having been increased as from 11th May, 1965.

181. The average C.I.F. value of imported Virginian leaf was Rs 10.11 per kg compared with Rs 8.48 per kg for domestic Virginian. The average values of air-cured Amarello and Burley, purchased by the manufacturers, were Rs 3.46 and Rs 3.14 per kg respectively.

182. Domestic Virginian, blended with imported leaf, is used in the manufacture of "State Express Filter King 555", "De Luxe", "Matinée", "Vogue", "Embassy", "Soirée" and "Mills" brands of cigarettes which sell in competition with imported Virginian cigarettes.

Imports

183. Imports of leaf and cigarettes for the last two years are tabulated below:

	1964		*1965*	
	Kgs	*Value* Rs	*Kgs*	*Value* Rs
Cigarettes	20,677	417,572	17,379	362,168
Leaf:				
Rhodesia	38,371	300,528	35,929	271,860
U.S.A.	78,725	902,474	72,966	829,598
Total leaf ...	117,096	1,203,002	108,895	1,101,458
Grand Total ...	137,773	1,620,574	126,274	1,463,626

184. Usings of domestic leaf have increased by 23,022.3 kgs and usings of imported leaf have decreased by 35,442.4 kgs, compared with 1964, a net decrease of 12,420.1 kgs. The increase in usings of domestic leaf was 4.9 per cent as compared with a decrease of imported leaf of 25.9 per cent.

Warehouse

185. The buildings were well maintained.

XI. Fibre Industry

186. The total production of Mauritius Hemp continued to be sold by the Mauritius Hemp Producers' Syndicate to the Government Sack Factory for weaving into sacks to be used for the bagging of sugar and rice being purchased from Burma. Comparative statistics in connection with production were as follows:

	1964	*1965*
Number of factories operating	12	10
Fibre produced (metric tons)	1,206	1,390,512
Value (Rupees)	1,461,732	1,685,300
Area under aloe (arpeuts):		
Wild	2,755	2,755
Plantation	257	257

Sack Factory

187. This organisation is controlled by a Board which publishes annually a full report on its activities.

188. The factory purchased fibre produced locally and imported jute cuttings to the extent:

		1964 kgs	*1965* kgs
	Aloe :	1,206,750	1,390,512
	Jute :	198,446	399,646
The carry over from the previous year was :	Aloe :	67,695	67,989
	Jute :	223,775	98,050
The factory consumed ...	Aloe :	1,206,237	1,298,774
	Jute :	324,008	413,964
Excess in stock	Aloe :	116	539.5
	Jute :	—	178
Shortage in stock	Aloe :	104	160
	Jute :	163	—
Aloe fibre sold		231	187
The carry over for the year was	Aloe :	67,989	159,543
	Jute :	98,050	83,910

189. In 1965, the prices paid for fibre were as follows:

	Price per metric ton	
	1964 Rs	*1965* Rs
Aloe fibre :—		
Very Good	1,300.00	1,300.00
Good	1,250.00	1,250.00
Fair	1,225.00	1,225.00
Tow	1,000.00	1,000.00
Sisal	1,250.00	1,250.00
Cuttings	900.00	900.00
Ropes	900.00	900.00
Jute :—		
Cuttings	692.91	983.00

190. The average price payable for aloe fibre was Rs 1,200 per metric ton and this will be applicable until the 31st December, 1968, in accordance with the Tripartite Agreement which has been extended for a further year by the Sugar Millers, the Mauritius Hemp Producers' Syndicate and the Government Sack Factory.

191. The factory's output for 1965 compared with that for 1964 was as follows:

	1964 *Units*	*1965* *Units*
Sacks (6 × 8) aloe	593,909	774,622
Sacks (5 × 7) aloe-jute ...	832,912	731,639
Other sacks	30,950	46,521
	Yards	*Yards*
Filter press cloth	18,464	12,108
Other fabrics	4,073	4,110
	Kgs	*Kgs*
Yarn	16,458	17,140
Rope	9,071	7,457

192. In 1965, the Government Sack Factory operated at a much reduced net loss of Rs 283,217 compared with Rs 638,000 in 1964 and Rs 569,952 in 1963. This reduction was brought about by the increase in the price of jute bags on the world market, with consequent effect on local selling prices. The reduction in loss was achieved in spite of a considerable increase in the price of jute cuttings. The actual cost of manufacture, for practical purposes, remained the same as in the previous year.

193. The reasons for the continuing loss were as follows:

(a) the price paid for local fibre was an agreed price whereas the price at which sacks were sold was the world price at which imported sacks could be purchased in Mauritius or in Burma.

(b) The factory purchased all grades of fibre produced locally thereby having to utilise the more expensive grades for the production of sacks, where cheaper grades of fibre could be equally well used;

(c) Owing to the smaller scale of operation, overheads were proportionately higher than in larger factories overseas;

(d) The cost of imported raw jute was higher than that paid by larger factories operating nearer sources of supply.

194. The factory faces further difficulties in the coming year in that there will be no orders for the aloe sacks from the sugar industry because of the stock position. In consequence, firm orders exist for just over half the annual production of the factory.

XII. Livestock

Milch Cattle

195. In accordance with policy, Friesian semen from selected bulls was imported with the co-operation and assistance, which is gratefully acknowledged, of the Department of Veterinary Services, Kenya. Supplies of room temperature semen were purchased and flown in weekly from March and made available to cowkeepers, together with semen from creole bulls through the artificial insemination service. At the end of the year, the results being obtained from the Friesian room temperature semen compared favourably with the results being obtained in Kenya.

196. At the end of the year, the two livestock breeding stations at Curepipe and Palmar carried a total of 304 head of the creole breed, 208 females and 96 males. An average of 64 cows were in lactation during the year with a mean production of 5.4 kgs of milk per head per diem. There were 64 calvings, 40 males and 24 females. 22 heifers calved at an average of 38 months and 18 days. The average weight of bull calves at birth was 30.2 kgs and that of heifer calves 28.9 kgs. Over a lactation period of 301.4 days, first calvers yielded 5.7 kgs of milk per head per diem; the best performer gave 8.4 kgs. Over 304.7 days, second calvers yielded 7.0 kgs of milk per head per diem; the best performer gave 17.8 kgs. Over 305 days, third calvers yielded 8.3 kgs of milk per head per diem; the best performer gave 10.7 kgs. 12 cows with more than 3 calvings gave an average of 9.2 kgs of milk per head per diem over 305 days, the best performer yielded 19.1 kgs of milk per diem. During the year, 20 cows were transferred to Rodrigues.

Herd Cattle

197. The livestock breeding station at Palmar carried 116 and 63 head of cattle of all ages of the Ongole and Boran breeds respectively. There were 27 calvings in the Ongole of which 12 were female. The average weight at birth of bull calves was 25 kgs and 26 kgs for heifer calves. Seven young bulls were sold for draught purposes and one for breeding. The Borans continued to thrive, 18 calves were born, of which 5 were males and 12 females; one was still-born. The average weight at birth was 26 kgs and 118 kgs at

weaning compared with 110 kgs for Ongoles at weaning (6 months). Two bulls were given on loan to breeders and one was given as a prize at the livestock show.

Brahmin and Ongole

198. With a view to improving the conformation of the Ongole stock, a Brahmin bull was purchased in 1963. During the past 3 years, selected Ongole cows were crossed with this sire. A total of 60 calves, 34 males and 26 females, were obtained of which 21 calves, 12 males and 19 females, were born in 1965. This cross has produced a satisfactory improvement in the frame of the progeny and unlike the pure Ongoles, the crosses were relatively short legged animals with heavier build and more flesh in the hind quarters. Some of the half bred heifers, which are now of breeding age, will be bred again to the Brahmin.

Pigs

199. The piggery at Curepipe carried an average of 31 head of stock of all ages of the Large White breed. There were 4 forrowings averaging 10.15 piglets, the average weight at birth being 1.98 kgs. The average number of piglings at weaning was 7.5 and the average weight 45.71 lbs. Three adult boars and one sow were sold to breeders, together with 10 young boars and 13 gilts. One boar was donated as a prize at the livestock show. The pig breeding project in Mauritius has not made the expected impact on pig production due mainly to the absence of efficient marketing facilities.

Goats

200. The herd of goats at the Palmar livestock breeding station comprised 51 Anglo-Nubian, 6 British Alpine, 21 Jumna Pari and 12 does imported from Rodrigues for crossing with Anglo-Nubian and Jumna Pari bucks.

201. Of the Anglo-Nubian herd, 14 kidded, the average weight at birth was 2 kgs and at weaning 18 kgs. During the year, 12 bucks and 2 does were sold to breeders and 5 bucks were stationed at district headquarters of the Extension Services to provide service facilities to goat breeders in the rural areas. Two bucks were given as prizes at the livestock show. In March 1965, 2 bucks and 12 does of the Jumna Pari breed were received as a gift from the Government of India. After quarantine at Roche Bois 7 does and 1 buck were transferred to Palmar and 4 does and 1 buck were stationed at Réduit. During the year, 10 does kidded producing 12 kids, 7 males and 5 females. The average weight of kids at birth was 3.8 kgs compared with 2 kgs for Anglo-Nubians and at weaning 19.5 kgs compared with 18 kgs for Anglo-Nubians; the best producer yielded 1.7 kgs of milk per day while the average milk yield of 7 does was 0.6 kgs per head per diem.

Sheep

202. The 8 head of Romney Marsh continued to thrive.

Rabbits

203. Seventy-nine rabbits of the Flemish Giant, Chinchilla Giganta, California, White and New Zealand White breeds were carried at the rabbitry at Réduit and 8 at the livestock breeding station, Curepipe. During the year, a total of 24 litters were born; 13 to Flemish Giant, 57 to Chinchilla Giganta, 26 to California Whites and 45 to New Zealand Whites but 88 died representing 62.2 per cent mortality. The average number born per litter by breed was 6.5, 6.33, 5.2 and 5.62 respectively and the average number weaned was 2.5, 4.12, 3 and 2.33 respectively.

204. During the year, 2 Flemish Giants, 10 Chinchilla Gigantas, 4 California Whites and 6 New Zealand Whites were sold to breeders including a pair of Flemish Giants exported to the Department of Agriculture, Seychelles.

Poultry Breeding Centre

205. The breeding programme for the White Leghorn was continued but the Rhodes Island Red breed was scrapped due to its loss of popularity amongst producers. The selected White Leghorn breeders maintained their mean performance of 200 plus eggs to 500 days age but it must be added that this breed too has lost its popularity with the advent of hybrids.

206. The parent stock of " 404 " and " 707 " Thornber hybrid strains for the production of layers was maintained. 26,273 " 404 " hybrid chicks were produced; 12,874 pullets and 13,399 cockerels were sold to breeders for egg and table poultry production respectively. During the year, the new egg laying hybrid " 707 " was supplied to producers; 5,034 chicks were sold of which 3,163 were pullets and 1,871 were cockerels. In addition the Sykes broiler parent stock, for the production of pure broiler chicks, was maintained with satisfactory results and a new broiler strain from Cobbs was introduced.

207. During the year, the centre carried stock, on a monthly average, of 122 per cent more than in 1964 and produced 62,550 chicks compared with 29,326 in 1964, an increased output of 133 per cent. Of the total production 12,469 chicks were sold as day-old pullets, 7,980 as month-old pullets and 9,350 broiler chicks were suppied to the newly established commercial broiler producers. 17,750 day and month old hybrids cockerels were sold for small scale production of poultry meat. 9,445 kgs of dressed and live chicken were sold for the table from all trials. Poultry was also supplied to the Annual Health Laboratory for the testing of vaccines, to the winners of prizes at the livestock show, to District Headquarters as well as to Rodrigues.

208. The demand for Broad Breasted Bronze turkeys was limited and the breeding programme was accordingly restricted to the few orders received.

Egg Production

209. 308,467 eggs were produced at Réduit and 9,889 eggs at Curepipe. The monthly egg production of the various breeds maintained during the year was as follows:

Month	Breed									
	White Leghorn	*Parent Stock "404"*	*Parent Stock "707" & hybrid*	*Sykes Broiler*	*Light Sussex*	*White Rock*	*Rhodes Island Red*	*Cobb*	*Mixed*	*Total*
January ...	11,010	4,409	4,917	3,076	—	630	1,411	—	463	25,916
February ...	9,627	4,361	4,484	2,225	—	176	1,992	—	477	23,342
March ...	10,251	4,324	4,349	1,986	—	222	3,112	—	440	24,684
April ...	8,041	12,108	3,961	1,507	—	83	2,339	—	365	28,404
May ...	7,429	11,531	2,021	1,329	—	34	1,192	—	248	23,784
June ...	7,500	12,320	6,045	1,505	—	88	962	—	397	28,907
July	8,039	11,069	8,307	1,233	589	174	337	—	353	30,101
August ...	7,674	8,729	8,287	1,709	565	305	—	—	947	28,216
September ...	7,335	8,322	7,428	1,795	461	239	—	—	347	25,927
October ...	7,126	8,064	6,928	1,700	398	239	—	73	186	24,714
November ...	5,635	6,678	5,653	1,524	301	159	—	583	40	20,573
December ...	5,105	4,949	7,524	3,235	79	—	—	3,007	—	23,899
Total ...	94,772	96,864	69,904	22,914	2,393	2,349	11,345	3,663	4,263	308,467

210. Of the 318,356 eggs produced 195,644 were sold as table eggs, 104,762 were incubated for the supply of chicks to the public for replacement stock and broiler production and 3,200 eggs were used for vaccine production.

Reproduction

211. 62,550 chicks were hatched compared with 29,326 in 1964. There was a slight improvement in both fertility and hatchability of eggs set compared with the previous year but the performance was not equal to that obtained in 1963. Average fertility was 78.5 per cent compared with 77 per cent in 1964, and 82.9 per cent in 1963. Average hatchability was 60 per cent of all eggs set compared with 56 per cent in 1964 and 70 per cent in 1963. Steps are being taken to improve temperature and humidity control in the egg holding room as it is thought that this should result in improvement in hatchability.

212. The monthly reproduction performance of all breeds was as follows:

Month	*Number set*	*Number clears*	*Number hatched*	% *fertility*	% *hatched of fertiles*	% *hatched of all eggs set*
January ...	1,443	467	667	67.63	68.34	46.22
February ...	1,929	498	1,179	74.18	82.32	61.12
March ...	8,957	2,822	5,116	68.49	88.39	57.12
April ...	5,207	889	3,556	82.92	82.35	68.29
May ...	9,790	2,204	6,036	77.48	79.51	61.65
June ...	8,302	2,045	5,039	75.36	80.53	61.90
July ...	12,647	2,903	8,138	77.04	83.41	64.30
August ...	20,857	4,124	11,660	80.22	69.68	55.90
September ...	14,593	2,444	8,542	83.24	70.31	58.50
October ...	12,053	2,211	6,911	81.65	70.21	57.30
November ...	8,036	1,601	5,264	80.07	81.81	65.50
December ...	948	269	442	71.62	65.09	46.60
Total ...	104,762	22,477	62,550	78.05	76.01	59.07

Import of New Stock

213. To meet the demand for " 404 " hybrid chicks, 310 day old parent stock " 404 " pullets and 61 parent stock day old cockerels were imported from Thornber Brothers in the United Kingdom. The same firm also supplied 365 day old " 707 " parent stock pullets and 55 day old cockerels for the production of " 707 " hybrid chicks. 525 day old Sykes parent stock pullets and 103 day old cockerels were also imported as well as 528 day old Cobb's broiler parent stock with 80 day old cockerels.

214. During his mission to the United Kingdom, the Senior Veterinary Officer procured, as a gift, 207 day old pullets of the new Sykes laying strain " Hybrid 4 ", for trial.

Artificial Insemination and Veterinary Aid Services

215. To increase milk production as rapidly as possible, the new policy of crossing creole milch cows with high grade Friesian semen, imported from Kenya Department of Veterinary Services, was introduced as from March. For the present, this policy is based on voluntary requests from peasant farmers and all cows inseminated with Friesian semen and their progeny are eartagged with a view to control. Concurrently, upgrading of creole cows by using selected creole bulls was continued. A total of 13,395 calls for artificial insemination were received and 11,620 cows were inseminated. On the basis of first insemination, the average conception rate was 56.7 per cent which was somewhat lower than the conception rate of 60 to 64.5 per cent recorded in previous years. This relatively lower conception rate was possibly due to the use of room temperature Friesian semen. From March to December, 1965, a total of 566 cows were inseminated, using room temperature Friesian semen and the conception rate was found to be 39 per cent based on two inseminations. As a result of investigations towards the end of the year, it appeared that this reduced conception rate was probably directly related to the volume of semen injected at each insemination as a result of the new technique in use. Steps were taken to ascertain whether this was correct or otherwise.

216. 5,559 cases requiring veterinary aid were attended by the field staff. Of these only 2.3 per cent related to infertility due to ovarian cysts and these were successfully enucleated, the animals responding favourably to subsequent insemination. 9 per cent of the total cases requiring veterinary aid were treated for calcium and phosphorus deficiency and only 1.6 per cent failed to recover and were slaughtered on humanitarian grounds.

217. 43 samples of milk, blood and faeces were collected and submitted for analysis to the Animal Health laboratory.

XIII. Animal Health

218. The health of the stock at the various livestock and agricultural stations was on the whole good, thus providing optimum conditions for the successful implementation of the production programme.

219. The animal health picture of the island continued to be unique and no exotic animal disease was recorded; no deaths were reported among cattle due to piroplasmosis.

Cattle

220. As in the previous year, no case of summer mastitis amongst milch cattle at the livestock breeding stations was recorded nor was there any clinical cases of this important disease of dairy cattle. A general survey was initiated to investigate sub-clinical cases of mastitis but was restricted due to shortage of glassware and trained staff.

Goats and Pigs

221. The pig unit continued to thrive and no major trouble was encountered. The goat herd at Palmar station did well save one young adult and 4 kids died of coccidiosis. The Jumna Pari goats received from India have done well on the whole but whilst in quarantine at Roche Bois there were four cases of metritis, following parturition, three of which made a complete recovery after routine treatment. The fourth animal was finally destroyed for post-mortem and laboratory investigations which revealed none of the reproductive infectious diseases. Due to their pendulous and well developed udders the Jumna Pari goats appear to succumb to mastitis under poor management. One doe went down soon after kidding with gangrenous mastitis and one teat was lost.

Poultry

222. The poultry breeding centre carried an average of 13,336 birds of all ages on a monthly basis. Production was increased by 113 per cent over the previous year. The blood samples from all breeding stock were subjected to laboratory tests which revealed 7.3 per cent positive for C.R.D. The positive reactors were culled immediately. The average monthly mortality among adult stock from all causes was 2.33 per cent, amongst growers it was 7.83 per cent and among chicks it was 4.35 per cent.

223. The overall analysis of the mortality was as follows:

	Per cent
C. R. D.	1.07
Leucosis	8.2
Encephalomyelitis	4.06
Lung congestion (Respiratory) ...	25.6
Avitaminosis, rickets, etc.	20.78
Coccidiosis	4.08
Unabsorbed yolk, parasitism, etc. ...	36.21

224. The high mortality as a result of chilling and congestion of lungs occurred among young chicks in breeding pens and is represented by 25.6 per cent of the total post mortems conducted at the laboratory. This was due to congestion in the pens.

225. As in 1964, the major diseases affecting the stock were Leucosis complex and nutritional deficiency. Worm infestation and Coccidiosis was not lower than the previous year due to slackening in management standards. Although actual clinical evidence of the presence of C.R.D. among the stock was 1.07 per cent, the blood analysis showed 7.3 per cent positive reactors which were immediately culled and strict control and medication has been introduced which should help to eliminate this disease in the coming year.

226. Once again pooled blood samples from the stock at the centre were sent to the veterinary laboratory in Salisbury, Rhodesia, for analysis in respect of Infectious Bronchitis. Three groups were found negative and two doubtful. Further samples are being submitted.

Rabbits

227. The general health of the adult stock was good and no fresh outbreak from snuffles was revealed. Mortality among young rabbits was high due to Coccidiosis but this was quickly arrested with medication and hygienic control.

Laboratory Services

228. During the year the work of the animal health laboratory was concerned with *(a)* general diagnosis; *(b)* disease surveys and *(c)* vaccine production.

229. A total of 5,592 post mortem examinations were carried out on large and small animals and on poultry and other birds. In addition, 176 milk samples were subjected to bacterial examinations, 1,703 blood samples were examined in respect of the protozoan diseases, 59 faecal examinations were made and 636 cultures prepared.

230. The following vaccines were produced at the animal health laboratory:

	doses
Inactivated Newcastle Disease Vaccine ...	144,000
Fowl Pox Vaccine	14,300
Canine Distemper Vaccine	13,200

231. A survey was commenced on bovine mastitis but was restricted due to the shortage of essential glassware. Likewise the survey on Pullworm disease could not be completed due to lack of trained staff.

Vaccination Campaign

232. To ensure effective control of Newcastle Disease, trained vaccinators, equipped with Kaycee Avijectors and protective clothing, were posted in the districts. Thus for the first time modern vaccination facilities were brought to the door of large and small poultry keepers. During the year, 70,093 birds were vaccinated against Newcastle Disease and 3,695 birds against Fowl Pox. In addition, the vaccinators helped small poultry keepers with simple advice on management.

Tuberculin Testing

233. For the first time, the single intradermal comparative tuberculin test was employed and 24 buffaloes, 1,017 herd cattle and 391 milch cattle in Mauritius and Rodrigues were tested with this method. There were 13 (54.1 per cent) positive reactors and 2 doubtful (8.4 per cent) among the buffaloes, 24 positive reactors (2.4 per cent) and 21 (1.9 per cent) doubtful among herd cattle and there were no reactors among the milch cattle tested. All reactors were disposed of through slaughter and doubtful cases were isolated for subsequent re-testing.

Animal Quarantine Service

234. To prevent the introduction of infectious/contagious diseases into Mauritius, the provisions of the Animal Diseases Ordinance were rigidly applied to all imports of livestock and livestock products. The quarantine kennels and cattery, the poultry quarantine unit at Réduit, and the animal quarantine station at Roche Bois were maintained. At Roche Bois, four new isolation pens with shelter and fresh water supply were built to accommodate goats from Fort Dauphin, Madagasikara, imported for slaughter. To ensure against the introduction of any goat disease through these imports, the slaughter of Madagasikara goats was restricted to the slaughter house at Roche Bois, which is under the control of a fully qualified veterinary surgeon. Likewise slaughter of cattle from Madagasikara was restricted to slaughter houses at Roche Bois, Rose Hill and Curepipe.

Livestock

235. Under the provisions of the Animal Diseases Ordinance, 65 ships and 16 aircraft carrying livestock were cleared and all livestock, whether for slaughter or breeding, was held at the quarantine stations. During the year, the following stock was received at quarantine stations:

	Bullocks	*Sheep*	*Goats*
From Madagasikara	7,141	—	1,446
From Rodrigues	632	1,399	2,808
From Australia	—	3,345	105
Total ...	7,773	4,744	4,359

236. In addition, 4 in-pig gilts and 4 boars of the Berkshire breed from the United Kingdom and 12 in-kid goats and 2 bucks of Jumna Pari breed from India were received for breeding. The boars, gilts and their litter were subsequently shipped to Rodrigues while the Jumna Pari goats were released to the livestock breeding stations. 470 cage birds were also imported from the United Kingdom, France and Rhodesia and were quarantined.

237. At Réduit, 6 dogs and 4 cats from the United Kingdom, Kenya and France were quarantined for six months. Also 1,646 day old chicks, imported from the United Kingdom, underwent quarantine.

Imports of Livestock Products

238. During the year, 1,068 import permits and 590 landing permits were issued. All frozen meat landed was subjected to veterinary inspection

prior to release for sale. The following table summaries the imports of livestock products including frozen meats, offals, by-products of abattoirs and prepared livestock feeds:

Frozen beef and beef products	1,610,402¾ lbs
Frozen mutton and offals	1,069,528¾ lbs
Frozen goat meat and offals	121,161 lbs
Frozen pork and pork products	303,004 lbs
Frozen poultry	575,599 lbs
Eggs	43,937½ dozen
Frozen turkeys and ducks	6,408¼ lbs
Frozen rabbits	912 lbs
Livestock feeds (poultry cattle, pig and horse)	8,125,054 lbs
Meat and fish meals for livestock feeds ...	1,267,280 lbs
Bone meal for livestock feeds	232,064 lbs
Lucerne	56,000 lbs

239. During the year, 86 certificates of Veterinary Health were issued in respect of the export of molasses and 30 Veterinary Certificates of Health were issued in respect of the export of dogs, cats, horses and birds. For the first time, broilers, produced in Mauritius, were exported to Reunion.

240. Thirteen trophies and other articles made from game hide and skins were subjected to laboratory tests and were released after sterilisation.

Slaughter House Control

241. The six slaughter houses were regularly inspected with a view to controlling the standard of meat inspection and abattoir hygiene. Under the Food Control Order, 2,579 cows of the milch breed were permitted to be slaughtered compared with 2,973 in 1964. In addition, 90 animals of the milch breed were allowed to be slaughtered on humane grounds.

242. During the year, 16 cases of illegal slaughter of females of the milch breed were examined and certificates were issued to the Police Department. Likewise, 5 cases of out of season killing of stags were examined. Fifty one cases of alleged cruelty to animals were examined and treated and the required certificates were issued.

243. From the meat inspection returns, 20 total and 387 partial seizures on account of bovine tuberculosis were made among the Madagasikara bullocks slaughtered at Roche Bois, Rose Hill and Curepipe slaughter houses giving a 5.57 per cent incidence of bovine tuberculosis of the total of 7,302 per cent slaughtered. In contrast, there were 19 seizures on account of bovine tuberculosis in local stock slaughtered at abattoirs which amounted to 7,483 head, and incidence of 0.25 per cent infection.

244. During the year, 2,241 calves, 2,669 cows and 1,896 bulls of the milch breed were slaughtered producing 1,422,364 lbs of beef. In addition, 674 herd cattle and 627 bullocks imported from Rodrigues were slaughtered yielding 328,330 lbs of beef. 7,302 bullocks, imported from Madagasikara were slaughtered yielding 2,291,418 lbs of beef. During this period 1,028,367 lbs of frozen and 70,000 lbs of salted beef were imported. The total meat consumption was 5,140,479 lbs giving 6.8 lbs per capita consumption in 1965 exclusive of illegal slaughter and processed beef products.

245. 317,230 lbs mutton and goat meat was produced in Mauritius and 1,356,888¾ lbs was imported, giving a total of 1,674,118¾ lbs consumed, 2.22 lbs per capita. 947,382 lbs pork was produced and 38,457¼ lbs was imported, 1.31 lb per capita. In the above figures, offal and prepared meats are excluded. As figures for local poultry meat and egg production are not available, it is not possible to record per capita consumption of this animal protein.

246. The slaughter house returns revealed the following average weight of imported and local cattle slaughtered during the year:

	lbs
Local herd cattle	254.9
Local milch cows	249.1
Local bulls of milch breed ...	188.1
Calves of milch breed ...	178.7
Rodrigues cattle	249.5
Madagasikara cattle	313.8

247. During the year, 16 week-ends for the slaughter of unproductive females of the local milch breed were authorised. During the same period, 727 permits for the slaughter of males of the milch breed for wedding and religious ceremonies were issued. In addition, 12 butchers were licensed.

Training of Staff

248. The first training course for junior staff in veterinary science and animal husbandry was organised during the year. 36 lectures and practicals were taken by the Senior Veterinary Officer, the Veterinary Officers and the Poultry Officer. To augment the lectures and practicals, 36 films were exhibited at the monthly film shows organised with the assistance of the British Information Service. Besides subjects of general interest such as artificial insemination, beef cattle, livestock feed production and general farming, films on major diseases were shown including Rabies, Foot and Mouth disease, Anthrax, Johne's disease, Rinderpest, Tick Borne diseases, Brucellosis, Bovine Pleuopneumonia, Respiratory diseases of Poultry and Bacillary White Diarrhoea (Pullworm).

Advisory Service

249. The following advisory notes, basically for the use of junior staff, were prepared:

1. Handbook on Animal Health and Production for Field Officers — four chapters were completed.
2. Notes on Poultry Husbandry.
3. Notes on Rearing of Calves.
4. Bovine Tuberculosis including application and interpretation of the single intradermal comparative tuberculin test.
5. Bovine Mastitis including Hotis and Whiteside tests for bovine Mastitis.
6. Brucellosis including the Ring Test for detection of Brucella in milk samples.
7. Collection and despatch of pathological specimens.
8. The Ascoli thermo-preciptin test for the detection of Anthrax in infected material.

250. Apart from the field staff who advise stock owners on feeding and management problems, the senior staff of the veterinary services gave specialist advice to a large number of breeders.

Revenue

251. The various services rendered to the public produced revenue of Rs 323,274.40 compared with Rs 260,189.39 in 1964, the main sources of which were:

Service	*Rs*	*cs*
Sale of livestock, other than poultry ...	59,786	18
Sale of poultry, chicks, eggs, etc. ...	175,495	77
Sale of vaccines and drugs	9,798	25
Quarantine fees	60,197	20
Veterinary fees	16,256	00
Miscellaneous	1,041	00
Total ...	322,574	40

Presentation of Goats

252. On the 10th June, the Commissioner for the Government of India in Mauritius presented to the Honourable the Minister of Agriculture and Natural Resources, 2 bucks and 12 does of the Jumna Pari breed at the headquarters of the Veterinary Services division in the presence of the Honourable Premier and Minister of Finance, Sir Seewoosagur Ramgoolam.

XIV. Land Settlement

253. The Land Settlement Committee held one meeting to consider the transfer of holdings and the selection of one candidate for one plot of land at Palmar.

254. The tenants follow generally the advice given by officers of the Extension Service. In general the holdings were satisfactorily maintained. The yields of sugar-cane were above the normal of previous years.

255. Rent collection was again very unsatisfactory in spite of repeated requests to tenants to pay their rent. An Executive Officer was posted to the Extension Service in November in an effort to improve rent collection on land settlements.

256. At Terre Rouge, the scheme was completed; roads and irrigation canals were maintained.

257. The tenants of Vale, La Cave and Belle Vue have maintained their holdings satisfactorily. Several requests from the tenants to cultivate sugar-cane were turned down.

258. At Palmar, very few holdings remained uncultivated. Many tenants who had planted tomatoes, suffered because of falling prices following overproduction.

259. No new holdings were leased in Bée Manique. Repairs could not be effected to roads and bridges.

260. At Plaisance, all holdings were occupied in the production of foodcrops and vegetables.

XV. Extension Services

Visits to Plantations

261. More than 7,100 field visits were paid to sugar-cane and vegetable growers and advice covering all aspects of the various crops grown was given. The rational use of complete fertilizers with respect to mixtures, method and time of application was stressed, as was the choice of varieties in relation to region, especially for sugar-cane. For vegetables and foodcrops, the advisory service stressed particularly the timely control of pests and diseases of economic importance, crop rotation in relation to pest and disease control and the safe use of pesticides.

Demonstration Work

262. Twenty-five fertilizer demonstrations, on both sugar-cane and foodcrops, were laid down and marked differences in growth and yield were obtained in favour of complete fertilisers. One hundred-and-six demonstrations on the proper use of pesticides, for the control of insect pests and fungicides, for the control of plant diseases were likewise conducted on farmers' crops.

263. Forty-eight evening meetings of small farmers were convened throughout the island and problems of agricultural interest were discussed. Lectures on agricultural topics were delivered and these were accompanied by visual aids such as charts, slides, live specimens, film strips and short films. The main subjects reviewed were:

(a) The incidence of the virulent strain of gummosis and the resistance characteristics of varieties in commercial production;

(b) The use of complete fertilizers in relation to those available on the market, time and method of application to sugar-cane and other crops;

(c) Control of pests and diseases and precautions to be taken when using pesticides;

(d) Potato cultivation, use of certified seed and preventive spraying against blight;

(e) Better utilisation of available land and soil conservation measures.

264. Three series of two lectures each were delivered at which leaflets and pamphlets were distributed. The first of the series dealt with was on potato cultivation for planters of Moka and Plaines Wilhems and the other two on sugar-cane at Rivière des Anguilles and Mapou respectively.

Propagation and Distribution of Cane Varieties

265. With the advent of a virulent strain of gummosis, the range of varieties of sugar-cane, planted on stations, had to be changed to make more space for the cultivation of M. 442/51. Areas under sugar-cane propagation plots were increased so as to provide additional planting material of M.442/51 in 1966. 550 canes of the variety M.442/51 were distributed towards the end of the year. The Sugar Planters' Rehabilitation Fund Nurseries distributed 823 tons of planting material to cane farmers.

Pests and Diseases

266. Late Blight and Bacterial Wilt were the two major diseases affecting potatoes and tomatoes. The unusually wet winter rendered the control of Late Blight extremely difficult and low yields were obtained from potato plantations, especially in June and July. Tomato mould was much in evidence in the wetter part of the year but the price of tomatoes was quite low at the time and control was not economic. For the first time, winter cucumbers were affected by anthracnose.

267. The following insect pests were of common occurrence in fields: tomato borers, fruit flies, thrips, aphids and red spiders. Parasites for the biological control of the potato tuber moth were released in Black River.

268. Localised heavy incidence of spotted borer on both virgin and ratoon canes were reported throughout the island and were successfully controlled by applications of Dieldrin 15 at 3 c.c. per litre.

269. The new strain of gummosis, that was first reported in 1964, did not affect sugar-cane as much as was anticipated. Climatic conditions were favourable for the growth of sugar-cane and fields of M.147/44, which in 1964 showed symptoms of systemic infection, showed only mild symptoms of the disease on foliage.

270. Thirteen Field Assistants were recruited for the survey of small planter's fields so as to assess the incidence of gummosis and the distribution of the three varieties, namely M.147/44, B.3337 and B.34104, which should be totally replaced by 1970. The Field Assistants underwent a period of training and commenced working in the various factory areas.

271. M.147/44 and M.202/46 are both susceptible to the new strain of leaf scald that was reported in 1964 in the South. The recommended treatment is roguing of affected stools.

Foodcrop growing in cane interrows

272. A large acreage of virgin cane interlines was planted to potatoes, tomatoes, groundnuts, beans and maize. With the shortage of potato seed in June/July, interlines that were intended for potato planting were planted to beans and peas, resulting in overproduction and low market prices for french beans. Consequently, a certain amount of beans were allowed to go to seed for use as dried beans. In the wetter regions, there was an increase in the use of ratoon interlines for potatoes, beans, squash and peas.

Permanent District Demonstration Plots

273. A substantial acreage of the demonstration plots was devoted to the cultivatiotn of bananas, pineapple, manioc, sweet potatoes and fodder grasses to meet the demands of planters for planting material. The acreage under M.442/51 was increased to help provide cuttings of this new sugar-cane variety to small growers. Various crops grown in separate plots receiving no fertiliser or nitrogen only as compared to complete fertilizers were grown throughout the year to serve as demonstrations to planters visiting the centres. In addition, crops of commercial importance were grown to demonstrate recommended practices of pest and disease control. Throughout the year, trials on the seasonal behaviour of two varieties of beans, four varieties of groundnuts and local maize were in progress. Seedlings of as many of the current types of fruit trees as possible were produced at these centres for sale to the public.

Arsenal Demonstration Plot

274. 13,480 kgs of foodstuffs were produced; 200 canes of the variety M.442/51 were distributed to growers. The area under M.442/51 was increased to 40 perches. Vegetable seed and fruit trees were on sale. One silage pit was emptied in October yielding good quality material, a large part of which went to waste for lack of use. The pit was refilled in November.

Mapou Demonstration Plot

275. 6,720 kgs of foodstuffs were produced. Fruit trees were produced on the station and plants and vegetable seeds were on sale. Planting material of banana, manioc and sweet potato were supplied free of charge to several growers. Drought affected the crops at the centre both at the beginning of the year and towards the end of the year. The silage pit yielded good quality silage and was refilled with cane tops in November.

Vacoas Demonstration Plot

276. Intensive cultivation of vegetable and foodcrops resulted in the production of some 17,000 kgs of foodstuffs. Two varieties of beans, namely the Local Red and the Merlot strain from Reunion, were planted and no difference was observed in the yield of seed.

Rivière des Anguilles Demonstration Plot

277. 6,740 kgs of foodstuffs were produced and 11,280 kgs of sugar-cane were sent for milling. One bull calf was sold and 160 eggs of White Leghorn were sold for hatching. The Anglo-Nubian goats at the centre were too young for disposal to farmers. Seedlings of mango, avocado and pawpaw were produced for sale. Planting material of banana, pineapple, sweet potato and manioc was given free to planters. The silage produced was of high quality with very little wastage. A new pit was dug and the two pits were filled with chopped cane tops in October.

Central Flacq Demonstration Plot

278. 6,940 kgs of foodstuffs were produced and 21 tons of canes were sent for milling. Half an arpent of land was planted to M.442/51 for the production of cuttings for small growers. About 900 fruit tree seedlings

were produced for sale to the public. Trials on the seasonal behaviour of maize, groundnuts and beans were run throughout the year. 196 packets of vegetable seeds, 285 lbs of bean seeds and 704 fruit trees were sold to planters. A second silage pit was dug and the two silo pits were filled with chopped cane tops early in November. The Anglo-Nubian buck served five does for breeders of Flacq. The cow gave birth to a bull calf which was sold to a farmer and two Anglo-Nubian goats were disposed of for slaughter as they had become unsuitable for breeding purposes. Three Anglo-Nubian bucks were sold to members of the "Produce More Food" campaign for the purpose of producing cross bred animals of superior quality to the local breed of goats.

Plaisance Demonstration Plot

279. 8,849 kgs of foodstuffs were produced and 11,040 kgs of sugar-cane were sent for milling. 11 pairs of rabbits for breeding purposes and 184 eggs for hatching of White Leghorn × Rhodes Island Red were sold to farmers. Mango and avocado seedlings and orange grafts were produced at the station for sale to planters. Good quality silage was obtained when the silo pit was opened and this was refilled with cane tops in November.

Assistance to small growers

280. The area of Mare Choisy, from which a large amount of foodcrops is produced every year in the winter season, always suffered from waterlogging after heavy rain. The region is low lying and is drained by the river Françoise, which had become choked with water hyacinth and other weeds. The planters who each for the most part, cultivated one-half to one arpent of land could not decide amongst themselves on community action to clear the river mouth and the various other drains which were also choked with weeds. At the request of the Extension Officers of the region, evening meetings were arranged and the planters formed a working committee. Nine meetings were held and were attended by both the Agricultural Officer and the Assistant Agricultural Officer of the area. The Extension Service approached the Ministry of Health, which gave sympathetic consideration to the case and the Malaria Section of that Ministry cleared the river mouth. The farmers formed themselves into working groups and cleared the other main drains. By the end of the year, the river mouth and all the main drains had been cleared, widened and deepened to the sea. The level of the water fell as a result and the farmers commenced to raise funds to rebuild bridges, which through neglect, had fallen into disrepair and, in some cases, had collapsed.

281. Several visits were paid to school gardens and advice given on the growing of suitable crops. The Social Welfare Month Programme in the South gave rise to an increase in activities on school premises. Requests were received from several schools which were not included in the fourteen selected in 1963.

282. Some two arpents of steep land were laid out on the contour for sugar-cane planting. Contour planting of sugar-cane is now a recognised practice.

Liaison with the Mauritius Sugar Industry Research Institute

283. The close contact established between officers of the Extension Service and those of the Mauritius Sugar Industry Research Institute was maintained. Field visists were organised, especially in connection with disease and pest control. The following lectures delivered by officers of the Institute were attended by Extension Officers:

Date	*Lecturer*	*Subject*
22.3.65 ...	R. Antoine	Gummosis
26.4.65 ...	W. de Groot and J. Lalouette	Selection of cane varieties
24.5.65 ...	Y. Wong	Soil and fertilisers
24.6.65 ...	E. Rochecouste ...	Weed control
26.7.65 ...	J. D. de R. de St. Antoine	Cane quality — By products
23.8.65 ...	C. Mongelard and G. Mazery	Plant Water relationship and irrigation
27.9.65 ...	J. R. Williams ...	Entomological problems
22.11.65 ...	G. Rouillard	Observations agricoles à Formose
13.12.65 ...	P. Halais and D. H. Parish	Cane nutrition

Radio Talk

284. A broadcast talk in Hindi on the use of pesticides was given by an Extension Officer.

Miscellaneous Activities

285. The "Produce More Food" campaign was extended to the villages of Rivière des Créoles, Rivière des Anguilles, Solférino, Cascavelle and Cottage. Efforts were mainly directed towards the growing of fruit trees and foodcrops and the raising of chicks in the following villages: Pte. aux Piments, L'Espérance Trébuchet, Poudre d'Or Hamlet, Cottage, Camp Ithier, Laventure, Providence, L'espérance, Case Noyale, La Gaulette, Cascavelle, Camp Diable, Rivière des Anguilles, Rivière des Créoles and Solférino. Local committees met at regular intervals and weekly visits were paid by Extension Officers.

286. Fruit trees and two month old chicks were delivered to "Produce More Food" campaign villages, Youth Clubs and Young Farmers Clubs. 2,183 fruit trees of various types and 2,173 chicks of White Leghorn × Rhodes Island Red and "404" hybrid were distributed. Planting material of grasses and various foodcrops such as banana, sweet potato, manioc, acacia, and pineapple were given free on request and transport for same was provided. Five Anglo-Nubian goats and 25 pairs of rabbits were sold to farmers. Eight young bulls and six male goats were castrated for meat production. The fruit trees planted at the beginning of the campaign were in bearing.

287. A number of lectures and demonstrations was arranged for the benefit of Youth Clubs, Young Farmers Clubs, School Teachers of the South and also in connection with the regional shows put up by the Young World Mobilisation Appeal Committee.

288. Lectures and demonstrations on fruit tree planting were given in several villages of the South during the Social Welfare Month Programme. The meetings of the Social Welfare Board Sub-Committee for the Welfare Month were attended by the Senior Agricultural Officer and the Agricultural Officer for the South.

Agricultural Show

289. The division had four kiosques at the agricultural show held at Pamplemousses gardens from the 20th to the 22nd of August. Several participants of the " Produce More Food " campaign sent in exhibits and many of them obtained prizes. The Federation of Young Farmers Clubs also had successful exhibits on show and both these sections attracted a lot of attention.

290. Ten silage pits were filled with cane tops. Only three cowkeepers showed any interest in silage making. The material removed from silage pits during the year was of good quality and was readily eaten by animals to which it was fed.

291. A few requests for spraying facilities on potatoes were received, particularly from the wetter parts of the island. About 60 arpents were thus sprayed but on the whole it can be stated that most professional planters have their own spraying equipment.

292. Under the Certified Seed Potato Subsidy Scheme, registration of growers was carried out as in the past. 2,461 permits were issued but, on account of the short supply of certified seed during the period June/July, seed was delivered on 1,536 permits amounting to 704 tons of certified seed. About 900 arpents of land were visited prior to planting and before harvest. It was estimated that 1,015 arpents were planted to potatoes. The average yield was rather low at 3.9 tons per arpent. However, a large proportion of the first season plantings suffered severely from Blight and Bacterial Wilt whereas the second season plantings gave high yields. The market price at harvest was maintained at a fairly high level except for a short period in October/November when prices fell, due to a temporary glut.

293. Various surveys were conducted during the year including:

1. Assessment of Crown Land for rental value and suitability for agricultural development;
2. Gummosis and leaf scald survey to assess distribution in sugar-cane fields of small planters;
3. Assessment of damage done to crops as a result of the indiscriminate use of herbicides;
4. Investigation of fodder problems;
5. Collection of statistical data for foodcrops under harvest;
6. Assessment of potato and onion production for the Agricultural Marketing Board;
7. Weekly recording of market prices for vegetables;
8. Estimation of the annual foodcrop vegetable and fruit harvest.

XVI. Foodcrops

294. The following tables were prepared from data collected by the Extension Service:—

AREA HARVESTED (ARPENTS)

Year	Maize	Manioc	Arouilles	Sweet Potatoes	Ground nuts	Irish Potatoes	Beans & Peas	Pine Apples	Brinjal	Tomatoes	Ginger	Creepers	Mixed Vegetables	Bananas	Total
1964	60	50	91	91	317	1,210	577	118	264	2,171	82	1,403	1,459	582	8,364
1965	426	66	59	93	635	1,015	887	68	271	1,800	79	1,742	1,641	1,021	9,803

ESTIMATED AVERAGE YIELD KGS/ARPENT

1964	432	4,000	4,407	5,120	1,608	4,900	889	3,500	4,534	2,513	5,725	4,483	4,311	5,151	—
1965	696	4,076	4,411	5,137	906	3,900	1,070	4,533	5,550	3,000	5,100	5,336	5,297	10,319	—

ESTIMATED TOTAL COMMERCIAL PRODUCTION (METRIC TONS)

1964	25	200	401	466	509	5,930	513	413	1,197	5,456	469	6,304	6,290	2,998	31,171
1965	296	269	262	478	575	3,972	950	306	1,504	5,400	403	9,296	8,693	10,318	42,722

The area shown above was effective acreage harvested and includes the aggregate acreages of different crops grown on the same land in one year, as well as foodcrops interplanted with sugar-cane.

XVII. Experiment Stations

Curepipe Experiment Station

Development

295. Six hundred feet of new roads by 12 feet wide were constructed and the entrances to the station equipped with metallic gates. About half an acre of scrub land on the sides of a stream flowing through the station was cleared and planted: half under *Setaria sphacelata* for fodder and half under *Colocasia esculenta* (Arouille violette). A small pond was made in the guava orchard. A concrete dam was constructed to prevent flood water, carrying *Tilapia* fries, from entering a fish pond containing *Catla catla* and *Labeo rohita*. The fertiliser-cum-tools store was completed. An implement shed was also erected as a lean-to to the materials store.

296. The old store was converted into a potato store for storage trials. The methods of storage under trials were in shelves, on trays and in bulk. The store was equipped with an electric motor and fan blowing cold air into the room and through the potatoes in the early hours of the morning.

297. The old fertiliser store and poultry feed store were also modified for potato conservation trials. The potatoes were stored in bins, with ducts in the floor, through which cold air and a sprout depressant were blown when required.

Fodder

298. The following species of imported grasses were tried during the year: *Eugleana mexicana* and eight strains of Rye grass e.g.:

Rye grass
Rye Perennial Aberystwyth S.23
Rye Perennial Aberystwyth S101
Rye Italian special
Rye Italian
Rye Perennial
Rye Italian Aberystwyth S.22
Rye Perennial short rotation

All the grass plots were growing satisfactorily.

299. Two varieties of fodder oats, imported from Israel, namely Saia-2 and Saia-4 were sown on 25th September: germination was good and growth satisfactory. Both flowered on 27th November and were cut on the first of December. The yields of fodder after two months growth were as follows:—

Saia-2	...	5.324 tons per acre
Saia-4	...	4.162 tons per acre

The regrowth of both varieties was negligible.

300. The fertiliser trial on *Setaria sphacelata* (var. Bua River) with two rates of nitrogen of 40 and 80 lbs Nitrogen per acre (treatments N_1+N_2 respectively) applied after each cut in the form of sulphate of ammonia, combined with annual applications of:

(a) 40 lbs K_2O per acre as sulphate of potash plus 40 lbs P_2O_5 per acre as single superphosphate (treatment B_1)

(b) 80 lbs K_2O per acre plus 80 lbs P_2O_5 per acre (treatment B_2)

gave the following yields for the 7 cuts made during the year:

Treatments	N_1B_1	N_1B_2	N_2B_1	N_2B_2
Yields (tons per acre)	53.26	52.03	65.04	65.17

L.S.D. 5% = ± 8.237 tons per acre
L.S.D. 1% = ± 11.845 tons per acre

There was a definite response to the higher rate of nitrogen and no response to the higher rates of phosphate and potash.

301. Another fertiliser trial with *Setaria sphacelata* (var. Bua River) was laid down on 17th March. The treatments consisted of the following:

(i) 2 rates of 30 lbs per acre (N_1) and 60 lbs per acre (N_2) of N as sulphate of ammonia applied after each cut.

(ii) 2 forms of P_2O_5 (e.g. basic slag and triple superphosphate) applied at the 2 rates of 30 lbs per acre and 60 lbs per acre each in mid-January and mid-June respectively (symbols B_1 and B_2 for basic slag and T_1 and T_2 for triple superphosphate).

(iii) 2 rates of K_2O — applied at the same time as P_2O_5 — 30 lbs per acre (K_1) and 60 lbs per acre (K_2) as muriate of potash.

302. Three cuts of fodder were made on 15th July, 10th September and 19th November respectively and the total yields in tons per acre of the three cuts were as follows:

Treatment	$N_2B_2K_1$	$N_2T_2K_2$	$N_2B_1K_2$	$N_1T_1K_2$	$N_2B_2K_2$
Yield (tons of fresh wt per acre)	34.9	34.2	30.6	30.2	29.5

$N_2T_1K_2$	$N_2B_1K_1$	$N_1T_2K_1$	$N_2T_1K_1$	$N_1T_1K_1$	$N_1T_2K_2$	$N_1B_2K_1$
29.4	29.2	29.1	28.8	27.8	26.8	26.0

$N_1B_1K_2$	$N_2T_2K_1$	$N_1B_1K_1$	$N_1B_2K_2$
25.7	24.4	22.6	20.5

No significant difference was observed.

303. A spacing trial with *Setaria sphacelata* (var. Bua River) with spacing 1′, 1½′, 2′, 2½′, 3′×6″ and 1′ respectively, planted on 19th Decem-

ber, 1964, was cut for the first time on 6th March, and up to 22nd November, more cuts were made. The yields in tons per acre were as follows:

1.	1½′ × 6″	6.	2′ × 1′
	61.8		47.7
2.	1′ × 6″	7.	2½′ × 6″
	59.1		43.3
3.	2′ × 6″	8.	2½′ × 1′
	54.9		42.8
4.	1½′ × 1′	9.	3′ × 6″
	54.5		40.3
5.	1′ × 1′	10.	3′ × 1′
	53.7		37.1

L.S.D. 5% = ± 6.275 tons per acre
L.S.D. 1% = ± 8.506 tons per acre

304. A weeding trial on *Setaria sphacelata* with weeding after each cut, occasional weeding, and no weeding was started in July in a field planted in January at a uniform spacing of 12″×18″. Preliminary observations indicate that " no weeding " gave as good yields as the weeded plots.

305. Observations made on the cost of production of *Setaria sphacelata* under station conditions indicated a cost of Rs 16.21 per ton of fresh grass.

306. The *Setaria* trial with 8 selected strains from Curepipe, planted in November, 1963, was cut 6 times during 1965, with the following results:

Setaria strain No ...	6	1	8	2	5	4	7	3
Yield tons fresh weight per acre ...	65.38	63.8	62.55	61.98	61.29	61.07	58.11	55.47

No significant difference was found between the strains.

307. The variety trial with 4 strains of Elephant grass from Reduit and a selected strain from Curepipe, planted in May, 1963, was continued. 6 cuts were made between December, 1964 and November, 1965 giving the following results:

	Reduit Strain No. 4	*Curepipe Strain*	*Reduit Strain No. 2*	*Reduit Strain No. 1*	*Reduit Strain No. 3*
Yields tons fresh weight per acre	46.1	44.6	42.0	41.0	38.9

308. A spacing trial with Elephant grass at spacings of 1′, 2′, 3′ and 4′ between the rows by 6″ and 1′ in the row respectively was planted on 11th January. The strain used was the selected strain from Curepipe. It was cut

on 8th March, and up to 9th December, 5 more cuts were made. The calculated yields in tons per acre were as follows:

Spacings ...	1′ × 6″	2′ × 1′	3′ × 1′	3′ × 6″	1′ × 1′	2′ × 6″	4′ × 6″	4′ × 1′
Yield tons fresh weight per acre ...	42.4	37.8	37.5	35.4	34.2	33.7	32.6	29.1

L. S. D. 5% = ± 2.19 tons per acre
L. S. D. 1% = ± 3.01 tons per acre

Orchard crops

309. All the varieties of mandarins bore fruits: Fagan, Local and Djeroek garoet were found to be acid while Empress and Djeroek Keprok poenten were sweet. The grape-fruit and orange trees did not bear any fruit.

310. Very good yields were obtained fom the guava orchard. The number of ripe fruits obtained from the best trees were: 577, 572, 438, 405, 334, 325 and 307 respectively; on average about 10 fruits weighed a pound.

311. 50 plants each of the coffee varieties Arabica and Excelsa were planted in 1963. The arabica plants flowered for the first time and yielded about ½ kg of fresh beans per tree. The variety Excelsa did not flower.

312. The apple variety Tropical Beauty produced one fruit. The fruit was sweet and palatable. It weighed 500 grams.

313. The grafted persimmon plants did not grow satisfactorily and produced no fruit. One plant of the local variety flowered and produced fruit.

314. A banana trial using three different types of planting materials, corms, swords and suckers, planted at four different times of the year was laid down in December, 1963. Results show no significant difference between the treatments. Observations on the cost of production of the variety "Nain" was started in a plantation laid down in July, 1964. The plants started bearing in July, 1965.

Foodcrops

315. A 3^3 fertiliser trial with *Colocasia esculenta* (Arouille carri) was planted in July, 1965 and will be harvested in 1966.

316. A spacing trial with *Colocasia esculenta* (Arouille violette) with spacings of $1\frac{1}{2}' \times 1\frac{1}{2}'$, $1\frac{1}{2}' \times 2'$, $1\frac{1}{2}' \times 2\frac{1}{2}'$, $2' \times 2'$, $2' \times 2\frac{1}{2}'$, and $2\frac{1}{2}' \times 2\frac{1}{2}'$ was planted in July, 1965.

317. All the potato trials carried out were discarded due to heavy infestation with Blight, the weather being unusually wet. Potato conservation trials were started in December, 1965.

318. Two hundred and eleven tons of silage were produced in two tower silos and 1,591 tons of green fodder were supplied for feeding the animals at the Curepipe livestock breeding centre of the division of Veterinary Services.

319. Investigations into the production of winter vegetables in summer were continued.

Livestock

320. Flocks of ducks and geese were maintained and bred in association with fresh water fish on fish ponds. 40 ducks and 1,369 duck eggs as well as 8 geese were sold.

321. One of the remaining 3 Black Swans received from the Australian Government in 1958 died of worms in January. *Catla catla* and *Labeo rohita* fish received as small fry from India on 22nd September, 1962, had by August, 1965 reached an average weight of 8 lbs and 10 lbs respectively. They had not reproduced to date. 613 units of *Tilapia* fingerlings and 1,063 lbs of table fish were sold.

322. 965 tons of farmyard manure from Curepipe experiment station were supplied to the various stations of the Department and other Departments and Ministries.

323. The total rainfall during the year was 161.4 inches.

324. The cash revenue collected from sale of produce at the Curepipe experiment station amounted to Rs 4,783.07.

Plaisance Experiment Station

Orchard Section

Citrus

325. The long term fertiliser trial continued. The growth of the trees continued to be promising.

Coconuts

326. A few trees of the Malayan Dwarf green variety and Pemba flowered. The Pemba plants were planted one year earlier than the Malayan Dwarf plants.

Grapes

327. Varieties Coudrec, Napoleon Chasselas, Isabelle (Roy) and Isabelle (Local), planted in February, 1964, fruited for the first time. All the fruits were acid though variety Isabelle (Roy) was less so. All varieties showed poor vigour.

Litchi

328. All plants continued to grow satisfactorily. A few plants flowered but did not fruit.

Pineapple

329. A 3^3 factorial fertiliser trial was laid down in February. A few fruits were harvested by the end of the year.

Mangoes

330. Production of fruits was low, compared with previous years, due to high incidence of Anthracnose owing to the unusually wet weather at flowering.

Miscellaneous Experiments

Ginger

331. A spacing trial planted on 23rd December, 1964, was harvested on 23rd of August. The following yields were obtained:

Spacing	*Tons per acre*
2′ × 6″	4.55
2′ × 9″	2.89
2′ × 12″	2.20
2½′ × 6″	2.79

L. S. D. P = .05 ± .72 tons per acre
L. S. D. P = .01 ± 1.04 tons per acre

332. A fertiliser trial with N, P_2O_5 and K_2O each at 0 and 30 lbs per acre was laid down on 1st December.

333. Another trial was planted on 4th December to determine yield and quality at different stages of growth of the roots.

Beans

334. In a variety trial planted on 3rd August, and harvested between the 23rd September and 21st October, the yield of green pods at the kitchen stage were as follows:

Variety	*Tons per acre*
Long Tom	6.6
Pioneer	6.3
Deuil fin Precose ...	5.8
Local Red Bean ...	5.7
Fin de Bagnol	5.3
Victory	5.1

Statistical analysis showed that there was no significant difference between the different varieties.

335. The 'Local Red' variety was planted on 23rd January with a view to assessing the cost of production under station conditions. It was harvested on 20th April and yielded 1,405.8 lbs of dry seeds per acre. The cost of production per acre was Re 1.00 per lb.

Onions

336. A variety trial on onions planted at the end of June, and harvested in mid October gave the following results:

Variety	*Tons per acre*
Rowcliff Brown	20.04
Early Grano	19.06
Hunter River Brown ...	16.76
Hunter River White ...	16.72
Bombay Red Round Special ...	7.92
Bombay Large Red ...	7.63
Poona Red Round	7.59
Texas Grano	3.79
Yellow Bermuda	3.65
Yellow Cap flat	2.95
Chateaux Vieux	2.49

L.S.D. P = 0.05 = ± 2.07 tons per acre
L.S.D. P = 0.01 = ± 2.82 tons per acre

Potatoes

337. The following varieties of seeds, obtained from Norway, were planted on 17th April and showed stunted growth with very poor germination: Parnassia, Pimpernel, Maritta, Jossing. No tubers were obtained at harvest.

Groundnuts

338. A variety and spacing trial with varieties Cabri, Makulu Red, Mgongo and Manipintar was laid down on 8th October. Germination and growth was good.

Sunflower

339. Small plots of varieties of sunflower were grown on 7th June for observation. The following weight of dry seeds were obtained when harvested 3½ months later:

Variety	*Tons per acre*
Vniimk 89.31	1.30
Peredovik	1.19
T. 56002	1.17
Tchermianka 66	0.85
Smena	0.83
Vniimk 16.46	0.81
Ienissei	0.61
Regional Entry Peredovik ...	0.55

VEGETABLE SEED PRODUCTION

340. The following were planted for seed and the produce forwarded to Barkly experiment station: peas, beans, bringelle, rosita, chillies and pumpkin.

AIRPORT SECTION

Development

341. About seven acres of land were cleared and planted under fodder.

Experiment

342. A fertiliser trial on Pangola grass was laid down in March with 3 rates of Nitrogen, namely 0, 30 and 60 lbs per acre applied after each cut; 3 rates of $P_2O_5+K_2O$, namely 0, 50 and 100 lbs per acre of each applied as follows:

(a) once annually in January;

(b) twice annually in January and May.

In general, the growth of the grass has been rather disappointing.

Fodder Production

343. Four hundred and sixty-three tons of fodder were collected from the station and sent to the Curepipe livestock breeding centre for feeding the animals.

Central Experiment Station

Development

344. Fencing of the ten acres of land, transferred from Le Réduit grounds to the station, was completed. Five acres of land were made available to the Mauritius Sugar Industry Research Institute for Gummosis resistance trials with sugar-cane. On the remainder, maize, manioc, groundnuts and sweet potatoes were grown.

Orchard Crops

345. The total area under citrus cultivation was almost 2½ acres. In the groves, there were 10 year-old mandarins of the following varieties: Empress, Fagan, Djerock Keproek Poenten and Djeroek Garoet; growth was variable. The variety Djeroek Keproek Poenten produced more fruit than the other varieties; the average yield per plant was 161.5. The flavour of Djeroek Keproek Poenten was superior to the other varieties but the fruit was small.

346. Marsh grapefruit, crown grafted ten years ago on Florida rough Lemon appeared to be unsuited to this climate. The plants were dwarfed and produced only a few fruit, most fruit dropping prematurely.

347. Some of the ten year old Java grapefruit seedlings have made good growth. Four plants bore an average of 23 fruits; the fruits were large and of good flavour.

348. The ten year old plants of Semineole Tangelo fruited well. Nine plants produced 2,575 fruit of good size and very juicy. For the first time, two plants of Mineole Tangelo each bore a dozen fruit. The Semineole Tangelo makes a delicious fruit to drink if properly prepared, while the Mineole Tangelo is suitable for eating as a fruit. In consequence, the latter is being vegetatively propagated; present evidence indicates that it is a shy bearer.

349. The yield of oranges, both on the 10 year old crown grafted plants as well as on the 3 year old budded plants was satisfactory. Eleven, 10 year old, Parson Brown oranges, planted at 12′×12′, produced 2,801 fruit, one plant bore 509 fruit.

350. The different treatments in the fertiliser trial laid down in 1962 gave no significant difference. The failure of the fertiliser treatment to reach significance can be explained by the growth variation among the plants within the plots.

351. Thirty budded local mandarines were planted to fill gaps in the grove. The oranges flowered profusely. After flowering, a severe white fly attack occurred causing fruit drop in spite of treatment.

352. 0.4 acre of the pineapple variety Queen Victoria was planted at 2′×2′×3′. The 3′ spacing appears to be narrow. Weed problem (mainly *Cynodon dactylon)* is acute.

353. The yield of two blocks each of 28 stools of "Nain" bananas was 13.5 tons per acre, whereas two blocks each of 28 stools of "Ollier" produced 14 tons per acre. The collection plots of banana varieties consisting of one row of each of nine local varieties were maintained. The nine varieties of bananas have also been planted out to provide shade in the coffee plantation.

354. The four varieties of peach imported from South Africa, King Edward VII, Angel, Florida Crawford and Babcock, planted in June, 1963, produced a few fruit; these were attacked by fruit fly.

355. The five varieties of Persimmons from South Africa Tane Nashi, Tippo, Mazeli (Japanese persimmon), Zendye and Guibochi again showed deciduousness from April to October. New shoots exhibited much variation in vigour and growth within the varieties. On the whole, the plants did not grow satisfactorily.

356. The two grafted apple plants of the variety Tropical Beauty produced about a dozen apples which did not mature. The growth of the plants was good.

357. The fruit of the Solo pawpaw from Hawaii, when allowed to ripen on trees, were attacked by Anthracnose; many plants died of soft rot. Anthracnose also slowly attacked the two Tanganyika pawpaw varieties, both yellow fleshed and red fleshed, which were introduced for the production of crystallised pawpaw.

358. Of the 19 Avocado seedlings, planted at the end of 1963 to provide seed for stock, eighteen developed very satisfactorily. Nine grafted plants: Saison, Colinson Itsanna, Peterson, Edranol, No. 10, Linda, Pavenoy, Black Round, Fairchild, Lula, Booth, Taylor were planted.

359. The three year old Kenya Arabica coffee, variety K3, fruited. Seed was sent to Barkly experiment station for propagation and some coffee was processed giving coffee of very good flavour. The plants flowered again profusely in October, November and December. For the first time, the three year old Excelsa coffee flowered in October but no fruit was set.

360. Four varieties of grapes were planted to be tried as stock from quality table varieties imported from Reunion.

Grass and Fodder

361. A fertiliser trial on Elephant grass was planted on 11th March to determine the effect of the same rate of Nitrogen (300 kgs Sulphate of ammonia per acre per annum) applied as follows:

(1) 50 kgs sulphate of ammonia applied after each cut

(2) 75 kgs sulphate of ammonia applied 4 times per year (last week of February, May, August and November)

(3) 150 kgs sulphate of ammonia applied twice yearly (last week of February and August).

362. The treatment was replicated four times in randomised blocks. Plot size was 1/33 of an acre. Stem cuttings were laid in furrows 3′ apart, At planting 100 kgs triple superphosphate per acre was applied. The first cut was made in May. Yield figures so far indicate that frequent applications of Sulphate of ammonia give increased yield.

363. A spacing trial on selected *Setaria* from Curepipe was planted in three replicates in early April. 100 kgs of triple superphosphate per acre were applied at time of planting. The analysis of yield figures on the 3 cuts made over six months showed no significant difference. It was noted that re-growth was quite satisfactory if rain followed the harvest but was checked if a dry spell occurred.

364. Eleven varieties of grasses were planted in a variety trial in four randomised blocks. Pangola grass was planted with a view to laying down a fertiliser trial when it become established.

365. Two varieties of oats, Saia No. 2 and Saia No. 4 were planted on 17th September. Flowering commenced in early November. On 10th November, a strip of 22′ × 130′ of each variety was cut to simulate grazing. The green weight of fodder obtained was Saia No. 2—7.5 tons per acre, Saia No. 4—5.2 tons per acre. The re-growth was slow, short and stemmy and tillering did not increase.

366. Four of the imported *Leucaena glauca* varieties once again outyielded the local strain.

Variety	*Tons per acre*
Peru	21
Guatemala	19
Bald Hills	18
El Salvador	17.5
Local	11.5
Hawaii	11

367. In the grass-legume plots, *Desmodium intortum,* was the only legume that survived in association with Elephant grass and *Panicum maximum* variety *trichoglume* (slender guinea). As previously observed, *Desmodium* completely swamped Pangola grass.

368. Katambora Rhodes grass was as good as the Endebess Rhodes grass. The selected Endebess Rhodes grass, propagated vegetatively, showed considerable variation. Seeds collected from the several selected stools, when sown, also showed extreme variability.

369. A new strain of Buffol grass, *Cenchrus ciliaris* (Molopo) was introduced and is under observation.

370. *Brachiaria brizantha,* introduced in 1963 from Ceylon, was planted in different regions of the country and is still under observation.

371. Clover, Lucerne, and Sorghum, introduced from Israel, seemed promising.

FOODCROPS

372. Seventeen varieties of manioc were planted in a variety trial. Twenty varieties were planted in collection plots.

373. A spacing trial was laid out on the sweet potato variety " Patate Rouge,', with plots of 1/60 acre and four replicates. 50 kgs of triple superphosphate plus 50 kgs muriate of potash per acre were applied at planting. 75 kgs of sulphate of ammonia+25 kgs nitrate of soda per acre were applied after establishment. Planting was carried out on 17th September, 1964 and harvested from 3rd to 5th March. There was no significant difference between spacings; yields were as follows:

Planting distance	*lbs per acre*
3′ × 1′	... 7,562
2′ × 1′	... 6,595
1′ × 1′	... 7,260
1½′ × 1½′	... 5,940

374. A variety trial with 6 varieties of sweet potato was laid out in randomised blocks, replicated three times. Plot size was 1/99 acre. Planting was done on mounds 3′ apart with 3 cuttings per mound 1′ apart; the yields obtained were :

Variety	*Tons per acre*
Patate Rouge	15.3
Joes	13.8
Violet	13.4
Pelican Processor ...	10.7
Mirebelle	9.6
White (Col. of Agr) ...	5.7

L.S.D. P = .05 = ± 3.1 tons per acre
L.S.D. P = .01 = ± 5.8 tons per acre

375. The following groundnut varieties were planted for seed production: Cabri (local). Makulu Red, Katumani 71, Manipintar, Spanish Red bunch. The following varieties were introduced from Israel, Beit Dagan No. 4, N.C. 2, Virginia bunch and from the United States of America, Tenessee Red, Starr, Spantex, Argentine, Dixie Spanish.

376. A variety trial with 10 introduced varieties of maize compared with the local variety was planted in March and harvested in July and August.

Variety	*lbs per acre*
H 53	2,706
Local	2,387
H 621	2,323
H 631	2,257
H 13	2,178
H 611	1,993
H 51	1,637
H 52	1,597
Katumani II	1,386
H 11	1,333
Kitale synthetic	1,201

L.S.D. P = .05 = ± 309 lbs per acre
L.S.D. P = .01 = ± 417 lbs per acre

377. Five hybrid maize varieties, Neveh year 157, 170, 22, 44 and 160, introduced from Israel, were planted compared with the local in a variety trial in October.

378. Eight varieties of sunflower imported from the United States of America were planted in June and harvested in September and October:

No. of flower heads harvested	*Variety*	*Weight of seeds (lbs)*
148	Ienessei	72
95	Tchermiankabb ...	82
74	Smena	39
121	Peredovik var. ...	46
125	Vniimk 8931 ...	56
59	Peredovik 15659 ...	23
39	T/56002	39
36	Vniimk 1446 ...	20

379. Five varieties of onions were planted at Palmar. They were severely attacked by thrips and treatment was delayed for three weeks. Yields were as follows:

Variety	*Tons per acre at harvest*
Hunter River White ...	15.9
Rowcliffe	14.2
Hunter River Brown ...	12.3
Early grano (i) ...	11.9
Early grano (ii) ...	11.6

Yields failed to reach significant levels.

380. At Arsenal, the acacia rows in a field of pangola have shown very poor growth despite the fact that the rows have always been clean weeded. The acacia in the *Tecoma* and pine forests adjoining the pangola field have also not grown at all. The fodder produced was supplied to local cowkeepers and fertilisers were applied as required.

381. Clearing of land and planting of Pangola was continued at La Ferme in areas of 20′ × 20′; a total of 8 acres was planted of which 5 acres became established. The variety trial now covers half acre and contains the following species: *Setaria sphacelata,* Rhodes grass, strains of *Panicum maximum, Hyperhaenia rufa, Cenchrus* sp., *Brachiaria* sp. and legumes such as Lucerne, *Desmodium intortum* and clover.

382. The cutting trial on *Heteropogon contortus* had to be abandoned because of intruders cutting in the grass plots at different times. The fodder produced was made available to cowkeepers.

383. At Palmar, two new paddocks on the calcareous soils were cleared and planted with Pangola. Fertilisers were applied and the paddocks were maintained.

384. The plots of acacia were not harvested. In winter, salt carried by the wind burnt most of the foliage. From October, the acacia made good growth and were left to produce seeds. The varieties Peru, Guatemala, Bald Hills, and El Salvador were superior to the local variety and the Hawaii variety was similar to the local.

385. The grass trials indicated that *Cenchrus, Brachiaria brizantha* (Ceylon), Rhodes grass and some strains of *Panicum* might be of some importance in this area as well as Pangola.

386. The paddocking of the station continued and 5,982 feet of stone walls were built with relief labour.

387. Half an acre of land at Bois Marchand was cleared and planted to several types of grasses in plots of 35′ × 35′. Twelve acres of land were cleared and planted with Pangola which has become established. Imported varieties of acacia were planted in plots 20′ × 20′ replicated four times with the local variety. During a dry period, the acacia was attacked by mealy bugs.

Plant Introduction

388. The following were imported during the year: Five varieties of potato from Norway, Parnassia, Pimpernel, Maritta, Jossing and As. Half of each variety was shipped in cold storage and the other half in ventilated storage. No difference was observed in the condition of the potatoes. Four varieties of potato from New South Wales were grown in quarantine, namely Bungama, Crana, Kurrel and Murru. Three hundred weight of each of the following 10 varieties of potato were imported from South Africa, 853/1, Acquilla, Arran Chief, King George, Suzanna, Up-to-date, Majestic, Pimpernel, BP 1 and A 700/2.

389. Vegetable seeds were imported from Israel, namely cabbage (Golden acre), carrot (Nantes — improved Hazera), lettuce (Bon jardinier Hazera), eggplant (High bush) and onion (Haemek improved); from Yates, Australia, onion seeds of Hunter River white, Hunter River brown, Rowcliffe Brown and Early grano; from Kirchoff, South Africa, onion seeds of Poona Red round, Bombay Red round and Bombay large red. Two varieties of dwarf beans were received from Australia: Redlands Belle and Redlands Green leaf as well as pea varieties from the United States Department of Agriculture namely, Frosty stock 32019, Victory freezer stock 62397, Wasatch stock 42044, Dwarf alderman stock 64501, Icer 95 stock 645, Hyalite, Viking, Perf. Freezer 60, Ensign, Cascade and Jade.

390. Three varieties of groundnuts were imported from Israel and five from the United States of America. Eight varieties of sunflower seeds were received from the United States of America, seven from South Africa and three from Canada.

391. Two varieties of oats were also imported and one variety of Sorghum Lucerne and Clover from Israel as well as eight strains of Rye grass from South Africa.

392. Sour orange seeds from Trinidad and Florida Rough Lemon seeds from South Africa were received for citrus propagation.

393. Three varieties of coconuts were received from Trinidad and five clones of pawpaw from Natal.

Barkly Experiment Station

Development

394. A shed to accommodate tractors and implements was completed and the building of stores commenced. Irrigation pipes were laid in the orchards to facilitate irrigation of fruit trees.

Seed Production

395. Thirty-one acres at Barkly and some eleven acres on other experiment stations were devoted to the production of seeds. About 24,200 lbs of vegetable seeds were processed during the course of the year.

396. Plants and seeds sold to the public and issued free to Government institutions over the last three years were valued at:

	1963	*1964*	*1965*
	Rs	Rs	Rs
Sale of seeds	27,796.55	34,727.91	36,849.81
Sale of plants	28,128.73	30,184.06	34,684 61
Total ...	55,925.28	64,911.97	71,534.42

Citrus

397. Some 4,000 Rough Lemon stocks were budded with Washington Naval, Parson Brown and Pineapple oranges, Local Mandarin, grapefruit Juddoo and Mineole Tangelo.

Coconuts

398. 5,000 Malayan dwarf coconuts were again imported from Malaysia and sown; the seedlings will be available for sale in 1966. The majority of coconuts, sown in 1964, were sold.

Other Orchard Crops

399. The yield of litchi was rather poor. Some 3,000 fruits were sent to the Bishop's Bazaar in aid of the orphanages.

400. Some fruit was obtained this year from the peach varieties imported from South Africa and the grafted acclimatised varieties Hall's Yellow, Angel, Alexander Jewel and Teton de Venus.

Abercrombie Nursery

Grapes

401. The grape variety Napoleon Chasselas continued to show considerable promise. At the end of the year the vines were carrying some 70 bunches of grapes.

Mangoes

402. A small crop of fruit of the varieties Aristide, Auguste, Baissac, Eugenie, Jose, Pignon d'Inde and Rosat was obtained. In general, they were of poor marketable quality due to skin infections.

Royal Botanical Gardens

403. The nursery continued the large scale propagation of plants for sale at Abercrombie and Barkly. The litchi crop harvested this year was sold by auction for a sum of Rs 1,750.

404. 179,000 visitors were estimated to have visited the gardens during the course of the year. An Agricultural Show was held in the grounds in August and attracted a large attendance.

405. The general maintenance of the gardens and the removal of dead trees and stumps were continued, as was the identification of unknown plants by the Mauritius Herbarium.

Richelieu Experiment Station

Development

406. Work was continued on reclaiming 40 acres of land formerly under aloe fibre. In the first half of the year, the heavy implements of the Sugar Planters' Mechanical Pool were used to complete the work of clearing, of digging storm drains and piling the stones into stone walls at the foot of 100 feet wide graded terraces. All terraces were then ripped and cross ripped and the stones were again removed with the rockrake and piled on the stone walls. With the aid of rock drills, a start was made on the removal of stones in the field.

407. The cleared area has been divided into 20 acres of good arable land for an experimental ley farm, an area of 4 acres for a pilot mixed farm and some 6 acres of land with gentle slopes for fruit crops, mainly citrus and bananas. A 6 year rotation was planned for both the ley farm and the pilot farm, namely 4 years grass and 2 years arable.

408. The pilot farm will be occupied by a peasant family who will be provided with a house and buildings for such stock as cows, pigs, rabbits and chickens. The occupiers will tend the stock, cultivate the land, maintain an orchard around the house and buildings, raise vegetables, etc. Tools and overhead irrigation equipment will be provided. An account will be kept of all expenditure and revenue, and the farm will be operated on a share profit basis with a view to determining the economics of a mixed arable farm under irrigation.

409. The materials for the overhead irrigation mains and laterals have been received. An half acre of land was acquired from Chebel Estate, adjoining the La Ferme irrigation supply canal, for the construction of an intake reservoir of 75,000 cubic feet capacity. A 10″ underground main

will feed the station from the reservoir entering the station with a head of 110 feet. An 8″ Woltman water will measure the water entering the area and 6″ outlet valves will enable the water to be tapped through 6″ aluminium sub-laterals to the 3″ aluminium laterals, 700 feet in length, on which the sprinklers will be spaced at 50 feet intervals. The rate of application will be 4.8 mm per hour at 2.5 atmospheric pressure, suitable for the type of soil being irrigated. One overnight application should give 2″ of water. As most of the terraces have been graded, it will be possible to carry out either surface overhead irrigation. The 10″ abestos mains will be linked with the existing cast iron mains on the station. An 8″ pressure maintaining valve will enable all surplus water to be discharged automatically into the existing reservoirs.

Tobacco

410. Methyl bromide continued to demonstrate its effectiveness as a soil sterilant for tobacco nurseries. Many tobacco growers treat their seed beds with Vapam or Unifume, which have given good control of nematodes and of many weeds. Beds treated with Vapam must be left fallow for at least two to three weeks before sowing to allow sufficient time for the chemical to evaporate from the soil. The sterilisation of seed beds with methyl bromide was more effective as it is completed within forty eight hours and controls soil pests and diseases and all weeds, including the obnoxious *Cyperus rotundus* and *Cynodon dactylon*.

411. Although methyl bromide has proved ideal for treating tobacco seed beds, an knowledge to its effects on other crops is required before it is used as routine. Methyl bromide has been shown to have an effect on nitrifying micro organisms; the amount of ammonia nitrogen is high during the first two weeks after fumigation and there is a fair residue of bromine to which many crops, such as onion, are very susceptible. At Richelieu, it has been found repeatedly that rice will produce chlorotic seedlings, if sown immediately after methyl bromide fumigation. Onion bulbs produced normal growth, if planted after the tobacco seedlings had been pulled, namely two months after fumigation.

412. Mixtures of methyl bromide and other chemicals such as chloropicrin, either pure or dissolved in kerosene, are now on the market in the United States of America for treating beds. They differ from the standard 98 per cent methyl bromide+2 per cent chloripicrin in volatility, effect on soil micro-organisms and in other properties. Samples of these products will be obtained for trials in 1966.

Release of new Varieties

413. Some varieties, bred at the station from seed introduced from the United States, showed considerable resistance to nematodes in addition to resistance to the major soil diseases such as Black Shank and Granville Wilt. During the year, the variety NC 95 gave the best performance and the Tobacco Board has decided to have the variety tried by selectel growers in 1966. In both 1964 and 1965, the varieties Vesta, NC 73,

Cokers 187 were tested by growers. The Tobacco Board has prepared a number of bales of leaf of those varieties for tests by the manufacturers. At Richelieu, new lines of Burley, 11A, 11B, and 37 were tested for yield and quality in a variety trial. Two methods of harvesting the leaf were also compared, namely the priming method which entails harvesting, stringing and curing the leaves in five or six pickings as they ripen on the plant and another method in which the leaves on the bottom half of the plant were primed in two pickings and the top half of the plant was cut, wilted in the field and hung in the barns to cure. Leaf from the priming method was of a lighter colour than leaf cured on the stalk which was more reddish coloured. As the local market requires a light coloured leaf, it would seem that the priming method should continue to be adopted.

414. The Burley varieties have now been tried by air curers for a number of years. They have produced fair yields of good quality leaf and have shown a high resistance to soil diseases. The breeding of new lines was continued. The varieties produce a light type of leaf suitable for cigarette manufacture.

Seed beds

415. All seed beds were fumigated with methyl bromide at Richelieu and Pamplemousses and a system of sprinklers was installed to water the beds. From the time the seed was sown until the plants were pulled for pricking into earth balls, the beds were untouched by hand; good germination and rapid growth of healthy seedlings were ensured by careful applications of water by sprinkler.

416. Four methods of fumigation with methyl bromide were tried, 1 lb methyl bromide for 24 hours, 1 lb for 48 hours, 2 lbs for 24 hours and 2 lbs for 48 hours, all per 100 square feet of bed area. The polythene sheets were removed after treatment and the beds were sown two hours after. No difference was found between the treatments except that a few weeds appeared on the beds treated with 1 lb for 24 hours. This indicated that, with clayey soils, the 1 lb treatment should be done for 48 hours to ensure complete weed control.

417. A number of insect pests made their appearance in the beds. The leaf worm, *Gnorimoschema operculella*, and the *Heliothis* leaf caterpillar were of frequent occurrence and may cause considerable damage in seed beds before their presence is noticed. Routine applications of insecticides were found to be essential.

Interspecific hybrids

418. The first generation of the hybrids resulting from a cross between the Virginian varieties as female parent and a wild type of Nicotiana collected at Rivière du Rempart, as male parent, were sterile. The reciprocal cross gave plants which seeded normally.

Fields

419. The tobacco season started well at Richelieu and Pamplemousses but late cyclone 'Rose', which occurred in May, when many fields of tobacco were half grown, caused severe bruising of the leaves. Spells of high winds in July and August aggravated the damage so that although most of the leaf was eventually picked, the quality of the cured leaf was below average. In consequence, curing experiments with various fuels could not be carried out. From the field experiments, it was still possible to obtain information on yields, resistance to disease, infection of roots with Black Shank and Nematodes.

420. A tobacco variety trial was planted at Richelieu with the Virginian varieties Yellow Mammoth, Bonanza, Vesta 30, Cokers 187, North Carolina 73 and North Carolina 95 at the end of March to assess yields, quality and resistance to root diseases. The experiment was of randomised blocks design with four replications. The field had been under Elephant grass during the three preceding years and was ploughed in December and again in February to ensure a good tilth. All varieties grew well.

421. Cyclone 'Rose' in May and strong winds in July/August caused such damage to the leaves that no leaf quality assessments could be made. It was possible to harvest and cure satisfactorily most of the leaves from the plots so that yield results were obtained from all the varieties. As soon as harvest was completed, the plants from the central row of each plot were uprooted and the roots examined for infection with Black Shank and Nematodes. The following table summarises the results obtained from the experiment:

	Yellow Mammoth	*Bonanza*	*Vesta 30*	*Cokers 187*	*NC 73*	*NC 95*	*Mean*
Leaf, lbs per acre ± 80 ...	1,350	1,260	1,210	1,220	1,410	1,420	1310 ± 33
Percentage infection of roots with Black Shank ± 2.86	7.2	12.2	9.4	8.0	16.5	2.8	9.4 ± 1.17
With nematodes ± 10.9 ...	24.7	26.1	32.9	14.1	16.6	8.3	22.1 ± 4.55

The first two varieties were bred at Richelieu from old introductions, whereas the other four varieties were received within recent years from the United States of America. The performance of NC95 was outstanding. This variety is highly resistant to Black Shank and nematodes, fairly resistant to bacterial wilt and gives leaf of good quality.

422. A tobacco fertiliser experiment was planted at Richelieu early in April with the Virginian variety Yellow Mammoth. It was a factorial experiment, in which the thirty two treatments consisted of all combinations of two levels each of nitrogen, phosphate, potash, lime and farmyard manure. The nitrogen levels were 22 and 44 lbs per acre as sulphate of ammonia, the phosphate levels 88 and 176 lbs per acre as single superphosphate, the potash levels at 44 and 88 lbs per acre as sulphate of potash, the lime levels at 0 and 10 tons per acre as slaked lime and the farmyard manure 0 and 10 tons

per acre. The lime was applied two weeks before planting and was mixed with the soil with a rotavator. The fertiliser mixtures were applied at the bottom of the holes and the manure on top one day before planting. The spacing was three feet between rows and two feet in the row. The field had been under sugar-cane during the three preceding years and had carried a crop of maize from September to February. The maize stalks were cut with the rotary slasher and the field ploughed and harrowed in early March.

423. Cyclone ' Rose ' in May and strong winds in July and August caused considerable damage to the tobacco leaves in the field. The quality of the cured leaf was affected to such an extent that it was not possible to determine the effect of the treatments on leaf quality. However, it was possible to make an analysis of the yield resulting from the treatments. The main responses from nitrogen, phosphate and potash were not significant, but there was a significant positive response to lime and a significant negative response to farmyard manure, almost the opposite of the results obtained last year. The interaction between lime and manure was also significant, as is clearly shown in the following table:

Yield of leaf in lbs per acre in NPKLM trial

	No lime	*Lime ±46*	*Mean ±32*
No manure	1,143	1,286	1,214
Manure	996	1,050	1,023
Mean ±32	1,069	1,168	1,119 ±23

424. This experiment will be repeated again in 1966. The practice of applying both manure and lime or manure and coral sand is common amongst growers.

425. The two varieties of oriental tobacco, Samsoun and Soluk, were planted out into the field for the first time in May. Results were not very encouraging as both varieties appear to be fairly susceptible to Black Shank, the major disease of tobacco in Mauritius. Samples of sun cured leaf of satisfactory quality were produced. Seeds were collected from a number of healthy plants and were then sown and planted out again in October.

426. At the end of March, a variety trial in randomised blocks and with four replications was planted with three Burley varieties, namely Burley 11A, Burley 11B and Burley 37. Fertilisers were applied at the rate of 440 lbs per acre of 10:28:14 granular mixture at planting followed by 220 lbs per acre of nitrate of potash two weeks later. All varieties grew well and the harvest was completed by the end of July. The results were as follows:

	Burley 11A	*Burley 11B*	*Burley 37*	*Mean*
Yield leaf lbs per acre ±46	1,540	1,690	1,780	1,670 ±27
Percentage root infection with Black Shank ...	64.1	70.0	61.3	65.0
With Nematones	9.1	17.6	4.5	10.4

Thus, Burley 37 has outyielded significantly Burley 11A, but not Burley 11B. The three Burleys produce a high quality leaf, much superior in flavour and aroma to the Amarello which is still the standard air cured

variety. The Amarello is favoured by growers because it will produce about one ton per acre in six to eight months, whereas the Burleys will produce three quarters of a ton in four months.

Seed Production

427. The station continued to be the sole supplier of seed to all tobacco growers through the Tobacco Board, which distributes the seed to growers free of charge.

428. Tobacco seed was produced from plots of selected strains of all varieties. The flower heads of all selected plants were bagged to ensure self pollination. As soon as the flower heads of one variety were dry, the selected plants, which were apparently healthy, were uprooted and the roots examined for infection by nematodes or Black Shank. All plants with healthy roots were collected, their flower heads cut off and bulked. In some varieties, e.g. NC95, 70 per cent of the selected plants had healthy roots, but in other varieties only 2 per cent of plants with healthy roots were obtained. This rigid selection is made possible in view of the small quantities of seed required by the tobacco growers; 10 kgs of seeds are sufficient per season. All seed was cleaned through the seed separator and well dried before storage. Prior to distribution to growers, the seeds are treated in a one per thousand solution of silver nitrate and dried. The station carries ample stocks of seds of all varieties.

Curing

429. 1965 witnessed the installation of the first gas curing and oil curing units in the barns of a number of tobacco growers. Curing experiments with firewood, petroleum gas and fuel oil were carried out at Richelieu in 1964 and samples of leaf, from the various curing methods, were submitted to the tobacco manufacturers for testing. Early in the year, the Tobacco Board approved the use of gas curing by tobacco producers. In the first season, a local firm installed more than a dozen 'Gastobac' units units in the barns of tobacco planters in all the tobacco areas and carried out experiments on gas curing compared with flue-curing with firewood on a fairly large scale. The London representative of 'Gastobac' visited Mauritius for a few weeks to help familiarise growers with the new technique of gas curing.

430. In 1965, the gas was supplied from a new source, namely East Africa, and consisted mainly of propane which is much less volatile than the previous mixture of 30/70 butane propane. This necessitated a number of adjustments in the equipment such as larger manifolds and pressure regulators. The agents have a good extension service backing the sale of 'Gastobac' equipment and, within a short time, most users were getting good results with the new system of curing. The high price of the gas is still the main drawback but there was an appreciable reduction in price during the year from Rs 1.80 to Rs 1.50 per kg .Most growers appeared to be satisfied with gas curing, especially those who are producing the more expensive grades of leaf.

431. Later in the year, the Tobacco Board approved the use of oil curing units by tobacco planters. Another local firm, who represents "Nu-oilmatics" equipment from Rhodesia installed some twenty units in the barns of tobacco growers. A representative of the Rhodesian firm also visited Mauritius and most of the users of the oil curing equipment seemed to be satisfied with the equipment. The cost of producing one kg of tobacco leaf is lower with the oil curing system, than with the flue-curing system using firewood.

432. At Richelieu, where the leaf from the fields had been badly bruised by cyclone 'Rose' and by high winds in July and August, the quality of the leaf turned out from the barns was lower than usual. However, adjustments or alterations were carried ou to both the gas and the oil curing units which resulted in greater efficiency. It is now possible to complete a cure in the gas or oil curing barn within 96 hours, whereas the time required by the flue-curing barn, using firewood, is well over 120 hours. The average prices obtained during the season was Rs 5.61, Rs 6.71 and Rs 6.61 per kg of leaf for the flue-cured, gas cured and oil curing systems respectively.

433. At Pamplemousses, a 'Gastobac' system was installed in one barn and the other barn was operated with flues. The leaf was of better quality than at Richelieu and the prices obtained were Rs 6.33 and Rs 8.02 per kg of leaf for flue-cured and gas cured respectively.

434. All leaf produced at the station was sold to the Tobacco Board. The leaf produced by the oil curing unit in 1964, to a value of Rs 11,453.35, was also purchased by the Tobacco Board during the season. The 1965 crop was sold for Rs 35,941.96.

Potatoes

435. Two trial consignments of seed potatoes from Norway were received in January and April and arrived in good condition. The seed potatoes had travelled from Oslo to Hamburg and thence to Mauritius on board Norwegian vessels. Each consignment consisted of 400 lbs of each of five varieties, one half in a ventilated hold and the other half in refrigerated storage. On arrival, the potatoes were examined and no difference was observed between the two methods of storage.

436. Half of the first consignment was planted out at Richelieu and Plaisance in February, the other half was stored. Four of the five varieties, namely Maritta, Jossing, Parnassia and Pimpernel, gave very similar rates of germination in the field; the fifth variety AS hardly sprouted. Subsequent hot weather and heavy summer rains resulted in almost complete destruction of the plants. The other half of the consignment deteriorated very rapidly in cold storage, owing to a fault in the cooling system and was practically lost for experimental purposes.

437. The second consignment of seed potatoes was planted out in May. The seeds were fairly well sprouted at the time of planting, AS being again an exception. Growth was good during the first forty days, but was soon checked by late blight, which was very severe throughout Mauritius during the season. All varieties showed considerable susceptibility to blight; repeated

sprayings with copper and carbamate fungicides failed to control the disease and most haulms had been killed by the seventieth day. The variety Pimpernel had still some green haulms ten days later. The yields obtained from this trial, which was of randomised block design with four replications, are recorded in the following table. All varieties were remarkably free from primary virus infection, which is a great advantage over seeds imported from some other sources.

Variety	*Tons per acre ± 0.29*		*Mean ± 0.20*
	Ventilated hold	*Refrigerated hold*	
Maritta	3.31	2.81	3.06
As	1.05	1.05	1.05
Jossing	3.94	4.09	4.02
Parnassia	3.42	3.95	3.69
Pimpernel ...	3.90	3.68	3.79
Mean ± 0.13 ...	3.13	3.12	3.12

438. Aside from the variety AS, which was very poor because it failed to sprout properly, Maritta has yielded significantly less than the other varieties. From the experiment it appeared that there is no difference in yield between the two methods of shipment; the first method being the cheaper.

439. Owing to shortage of potato seed on the local market, the experimental programme had to be curtailed. At the end of September, it was decided to try out in plant cane interrows the 400 lbs samples of varieties received from South Africa. Three of the varieties performed fairly well and gave the following yields:

Variety	*Tons per acre*
Up-to-date ...	... 4.03
Arran Chief	... 4.27
Susanna ...	... 7.02

Smaller quantities of seed of King George and of a Japanese variety, which were received later, gave yields of 6.62 and 4.13 tons per acre respectively. It was evident that the Japanese variety had been planted too late, it yields better if planted in August or early September. All potatoes harvested were forwarded to Curepipe experiment station where storage experiments were in progress.

Other Crops

440. The production of vegetable seeds was carried ont at Richelieu and at Pamplemousses. The season extended from April to December. The largest single item grown was the French bean variety Victory of which some ten acres were planted including four acres in plant cane interrows. Other vegetables planted for seeds included varieties of lettuce, brinjals, coriander, tomatoes, okra.

441. Bulbs of eleven varieties of onions, produced from imported seed, were planted out in early June with bulbs of two local strains of onions to determine what varieties will flower under conditions at Richelieu. The two local varieties and three of the imported varieties, namely Bombay Large Red, Poona Red Round and Bombay Red Round, specially flowered in mid July.

442. The local variety of maize was grown for production of seed. A stock of 3 tons of seed is renewed every year in case the Rodrigues main crop is destroyed. Five hybrids namely, Neveh Year 157, 170, 22, 44 and 160, received from Israel, were planted out at the beginning of October at Richelieu. They are performing remarkably well and are very early compared with the local variety; the hybrids may well be harvested within 100 days of sowing.

443. Groundnuts were planted on a larger scale for seed production. There was a considerable demand for seed by growers at the beginning of the year. The Extension Service had made provision for the supply of seeds to growers; storage and sales were carried out at Richelieu. At the end of the year, new stocks were held but demand had dropped. Many growers and estates have built up their own stocks of seed and the season has been too dry to enable planting to start on a large scale.

444. At the end of September, groundnuts were planted in plant cane interrows in an experiment designed to find out the yields obtainable from different methods of planting, namely single rows and double rows in combination with every interrow or with alternate interrows. Yields of approximately one ton per acre are usually obtained at Richelieu with the local variety Cabri in four months when planted in double rows in plant cane interrows, almost the equivalent of a straight plantation. At the end of December, it appeared that both the canes and the groundnuts were making good progress.

445. Another variety which has done well is Manipintar. It is more resistant than Cabri to *Cercospora* leaf spot and has shown good resistance to sclerotial rot. Manipintar requires at least five months to manure which renders it unsuitable for cultivation in cane interrows.

446. Three confectionery varieties from Israel and five oil varieties from the United States Department of Agriculture were planted out in early October with Cabri. All varieties appear to have started to seed at the same time.

447. Small samples of seeds of eight varieties of sunflower, received from the United States Department of Agriculture, were planted out in early June. They all grew well and proved to be oil varieties with single terminal flowers. The flowering was fairly uniform and the seeds were harvested in September. A first mass selection was carried out within each variety.

448. In mid October, the seeds were planted out again for further multiplication and selection. Small samples of seed of 7 varieties from South Africa and three varieties from Canada were planted out in the same field.

449. Sunflower was also planted in October in plant cane interrows. The experiment consists of six treatments which are combinations of single or double rows of sunflower in all or in alternate interrows of cane. The sunflower crop, which is completed in 3 months, appears to be well suited for planting in cane interrows.

450. 896.54 metric tons of cane were harvested compared with 690.23 tons last year. The increase in yields was due mainly to the larger proportion of the variety M.253/48 harvested. Wide furrows were con-

structed in the cane interrows with a pair of ' Bental ' disc ridgers mounted on a narrow frame behind the Vineyard Massey Ferguson wheeled tractor. Most of the fields at Richelieu are now under graded contours so that after opening the wide furrows in alternate interrows it is possible to apply surface irrigation on a rational basis. Yields averaged 42.7 tons of cane per acre.

451. Half of the new plantations of cane was made with material purchased from the Pointe aux Sables Cane Nursery, the other half was done with virgin cane produced at Richelieu from material imported last year. All plant cane interrows were planted with groundnuts, beans or potatoes.

452. The demand by estates or small growers for planting material of Pangola grass was small. Elephant grass is still the grass producing the highest volume of fodder per acre at Richelieu. Pangola and Giant Rhodes grass are also doing well.

Orchards

453. In the citrus orchard, planted in 1959 and 1962, almost all plants fruited during the season. A number of Tangelos, budded on Florida Rough Lemon and planted in 1963, also flowered at the end of the year. It seems that the citrus will flower twice a year at Richelieu, in May/June and again in November/December. Troublesome pests of citrus this season were the white fly and scale insects. Another 3½ acre-field was planted at the beginning of the year with citrus with wind breaks of 'Maison Rouge' mangoes. Pineapples are being established between the rows of citrus.

454. High winds and hot dry weather in June/July resulted in very poor setting of fruit in the citrus, litchi and mango orchards. The orchards were watered heavily with overhead irrigation equipment and a new flush appeared on most of the trees. It was thus possible to produce quite a heavy crop of mangoes at the end of the year. Anthracnose was the main disease of flowers and fruits of mangoes; damage was less severe on the choice varieties such as Baissac and Aristide than on the stock varieties.

455. Towards the end of the year, a new systemic insecticide, Bidrin, was made available by the Entomology division for spraying mango trees against gall-midge; control was good.

456. Through the Entomology division, a number of herbicides were made available for testing at Richelieu. Bromacyl has proved to give good control of all weeds over a long period in the citrus orchards of South Africa; also Bromacyl treated plots gave better yields than either clean weeded plots or plots with a leguminous cover crop. The chemical is also used to control weeds in pineapple plantations. Another weedicide tested at Richelieu was 'Paraquat'. This is a quick acting systemic herbicide which will penetrate through any green matter with which it comes into contact, but which is rapidly decomposed by contact with clay or soil. It is also being tested in the orchards.

Dairy and Poultry

457. There were sixteen heifers and one bull at Richelieu at the end of the year. An experiment was started with Rodriguan chickens to compare the standard chick feed with one containing scums.

Buildings

458. An implement shed, 70 feet long by 36 feet wide, was constructed at Richelieu with materials from a former railway shed. The lean to roof of the cowshed was repaired.

XVIII. Plant Pathology

Tobacco

459. Brown leaf spot of tobacco, *Alternaria longipes*, appeared on two plantations of the first season Virginia crop and was severe on two Amarello plantations during the rather wet and warm winter in the normally dry Pamplemousses district, but was remarkably absent from the second season Virginia crop, which was completely harvested before the summer rains, in the normally humid Etoile area of Flacq. Frogeye, *Cercospora longipes*, which has become a rarity since Zineb sprays in the seedbeds have become routine, was however still present as a potential danger in a few plantations, where all the recommendations were not observed. Powdery mildew, *Erysiphe cichoracearum*, which is ever present, was fairly severe in a few plantations where top dressing of nitrogenous fertilizers, prolonged overhead irrigation or too favourable growing conditions favoured rank growth. Granville wilt, *Pseudomonas solanacearum*, was severe in a field which had grown tobacco last year.

460. In spite of abundant aphids, tobacco mosaic and types of the virus complex reported in recent years were not widespread except in one or two cases where the recommendation that tobacco should not be grown in close proximity to solanaceous and other vegetable crops was ignored. In the absence of drought conditions, severe dwarfing was absent but even tall plants, affected with savoying and vein clearing developed severe necrosis of middle leaves. Tobacco Veinal Necrosis was not found in material despatched to the Virus Research Unit, Cambridge, although other necrotic strains of Potato virus Y, alone or in combination with tomato mosaic and cucumber mosaic, seem to be responsible for the various types of the tobacco virus complex.

461. The sudden chlorosis and necrosis of well-developed plants in small, well delimited patches reported last year, occurred again and more widely in the Etoile area. No fungus, bacterium, nematode or virus pathogen having been isolated, possible physiological causes are being investigated.

Tea

462. Isolated patches of tea bushes with leaves showing vein clearing and chlorotic mottling and leading to successive defoliations and rapid death of plants were observed in two localitties in the super humid zone, following drought periods. The conditions were somewhat suggestive of tea yellows, reported from Nyasaland, where it is attributed to a sulphur deficiency. Moderately affected bushes showed satisfactorily regrowth following top dressing with sulphate of ammonia. In localities where dead stumps of pine had been left in the soil at planting, individual tea plants were affected with a root disease caused by *Ustulina zonata*.

Potato

463. Norwegian potato varieties planted in February at Plaisance were heavily infected with bacterial wilt, *Pseudomonas solanacearum* and bacterial rot, *Pectobacterium carotovorum*. Potato late blight, *Phytophthora infestans*, was very destructive from June to September, Since susceptible varieties such as Delaware, King George, Japanese, were grown on a large scale, the disease spread very rapidly during cool, rainly periods and was not easily controlled by recommended dithiocarbamate fungicide sprays. Late blight was observed at Curepipe experiment station as late as December.

464. The following observations of resistance to late blight on newly introduced varieties were made at Curepipe experiment station, under extremely severe blight conditions.

Very resistant	*Resistant*	*Susceptible to very susceptible*
Roselyn sasanera	Pimpernel	Jossling
	Parnassia	Up-to-date
		Delaware

465. A fungicide trial was carried out at Curepipe experiment station in September on the variety King George with M/45 (80 per cent Zinc manganese ethylene bisdithiocarbamate); Maneb (Manganese ethylene bisdithiocarbamate); Difolatan (N. tetrachlorethyl sulfanyl) and Polyram-combi (zinc activited polyethylene thirame disulphide). The incidence of bacterial wilt, *Pseudomonas solanacearum*, was so high that no yield figures could be recorded. M/45, Maneb and Difolatan were however equally good and controlled the disease more satisfactorily than Polyram-combi.

466. A severe spotting of leaves, probably of virus origin, occurred in October on the variety Parnassia imported from Norway. A *Cercospora* sp., (possibly *Cercospora concors*), causing a leaf spot, was recorded for the first time on leaves of the same potato variety.

Maize

467. In May, plantations at Vacoas were infected with leaf spot, *Helminthosporium turcicum*, a disease which had not been observed for many years.

Tomato

468. Tomato plantations in the northern districts were very severely defoliated by grey leaf spot, *Stemphylium solani*, from January to April. Satisfactory control was obtained in fields sprayed with Maneb. The disease was observed to cause important losses at Belle Isle in August. Leaf mould, *Cladosporium fulvum*, was unusually common on tomato, even in the drier localities, from August to December. The disease was not controlled by Maneb sprays.

Groundnut

469. The following observations of resistance to bacterial wilt were made at Plaisance demonstration plot in February:

Highly resistant	*Resistant*	*Susceptible*
Cabri	Manipintar	Mgongo
	Makulu Red	4348

470. Variety trials at Arsenal, Mapou, Plaisance and Rivière des Anguilles confirmed the higher resistance of Manipintar and Makulu Red to *Cercospora* spp. compared to the local variety Cabri. The variety Mgongo was somewhat susceptible.

471. A fungicide trial with Brassicol 75 per cent wettable (Pentachloronitrobenzene) to control *Sclerotium rolfsii* was started at Reduit in December. In a seed dressing trial performed at Réduit, plots treated with either Agrosan G.N. or a mixture of Agrosan G.N. and Captan 75, 1:1, gave better stands than the control plots.

Onion

472. A post emergence damping off of onion seedlings caused by *Rhizoctonia* sp., a new host record for Mauritius, was severe at Palmar and Grand Sable.

473. A fungicide trial was carried out at Arsenal in March to control purple blotch, *Alternaria porri*, with the following fungicides: Anthracol, Zineb, M/45 and Triton B1956 as wetter-sticker. M/45 at 2 gms per litre and Zineb at 3 gms per litre controlled the disease more satisfactorily than Anthracol.

Eggplant

474. Eggplant wilt, *Diaporthe vexans*, was again important during the winter months and caused severe damage at Plaisance in August.

Bean

475. Bacterial wilt, *Pseudomonas solanacearum*, was severe during the the summer months. The Local Red variety was more susceptible than Victory. At Vacoas experiment station, a plantation of Local Red had 36 per cent wilted plants; at Plaisance another Local Red plantation had 10 per cent wilted plants.

476. In a trial at Arsenal in June, Victory, Local Red and Marlet varieties showed equal susceptibility to angular leaf spot, *Isariopsis griseoli*. Both M/45 and Maneb controlled the disease satisfactorily.

477. Collar rot, *Rhizoctonia solani*, was observed to cause some damage from September to October at Vacoas, Réduit, Arsenal, and Mapou. In a field of Victory at Vacoas experiment station, 6 per cent of the plants showed collar rot symptoms.

478. A fungicide trial with Brassicol (Pentachloronitrobenzene) to control *Rhizoctonia solani* was started at Réduit in December.

Pea

479. Powdery mildew, *Erysiphe polygoni*, was severe at Plaisance in September and at Arsenal in November but was satisfactorily controlled with Karathane sprays.

480. A fungicide trial was carried out at Réduit with Difolatan as a soil drench against *Fusarium* wilt. No significant results were obtained. In another trial performed at Arsenal in November with M/45 to control *Ascochyta* leaf spot, poor control was obtained.

Chillies

481. A disease with necrosis symptoms on both stems and leaves and suspected to be caused by a potato virus Y strain occurred at Morcellement St André in March.

482. A fungicide trial was started in June at Tombeau Bay to control powdery mildew, *Leveillula taurica*. The following fungicides: lime sulphur, wettable sulphur and Karathane were sprayed at weekly intervals. The rather warm winter conditions were not favourable to the disease and the control plots were not heavily defoliated. All three treatments however controlled the disease satisfactorily without phytotoxic effects.

Brassicae and Lettuce

483. Sclerotial rot, *Sclerotinia sclerotiorum,* was again severe on cabbage and lettuce crops at Vacoas experiment station. In June, a fungicide trial was carried out with Brassicol (75 per cent wettable Pentachloron trobenzene) on lettuce at Vacoas. With a single treatment performed at transplanting the mean percentage of dead plants was as follows:

Brassicol at 3 gms per sq. ft. ... 27 per cent
Brassicol at 6 gms per sq. ft. ... 22 per cent
Control: 39 per cent

The experiment was repeated in August with two applications: one before planting and the other after a fortnight. The percentage of dead plants was as follows:

Brassicol at 6 gms per sq. ft. ... 13 per cent
Control: 24 per cent.

Carrot

484. In April, bacterial soft rot, *Pectobacterium carotovorum,* caused considerable damage to carrot plantations, particularly those infested with nematodes.

485. In a fungicide trial at Réduit, Anthracol at weekly intervals controlled carrot blight, *Alternaria dauci,* satisfactorily. In another fungicide trial at Vacoas M/45 also controlled the disease.

Broad Beans

486. A twig dieback caused by *Phoma* sp. was recorded for the first time at Vacoas. Bacterial wilt, *Pseudomonas solanocearum,* also caused heavy losses (20 per cent wilted plants) in a plantation of broad beans in the same area.

Citrus

487. Citrus canker was again widespread on susceptible citrus species such as Rough Lemon. In a fungicide trial at Réduit, copper oxychloride controlled the disease more satisfactorily than Zineb. Drop of young fruit was important in September and October at Réduit and Mapou. A *Fusarium* sp. was present on some fruits. Mites seemed also responsible for much fruit drop. At Arsenal, a leaf spot caused by *Pestalotiopsis* sp. was recorded for the first time. Twig dieback, *Diaporthe citri,* in combination with *Colletotrichum gloesporiodes,* was observed in most localities.

Cucumber

488. Cucumber anthracnose, *Colletotrichum lagenarium,* was recorded for the first time on local white cucumber varieties. The disease, which is being investigated, was severe during the winter months in the humid areas, particularly at l'Avenir, Nouvelle Découverte and Vacoas. Symptoms occurred on both leaves and fruits. In summer symptoms were present on fruits only at Vacoas and Nouvelle Découverte. In a preliminary fungicide trial the spread of the disease was checked by Maneb sprays.

Squash

489. At Réduit, M/45 and Karathane satisfactorily controlled scab and powdery mildew respectively. A high incidence of squash mosaic was observed in February and March.

Banana

490. During the wet winter, cigar-end rot, *Verticillium theobromae,* caused severe damage to plantations in Plaines Wilhems and Savanne.

Coconut

491. A disease with symptoms similar to bitten leaf disease of coconut was observed on some plants of the Malayan dwarf recently introduced by seed; *Fusarium oxysporum* was isolated from the diseased plants.

Pineapple

492. In the northern districts, fruits showed symptoms of sunscald, cracking and side rot in January. The condition was probably physiological but a *Penicillium* was isolated from diseased fruits. In October, a disease with symptoms of base rot and root rot was investigated. A fungus was isolated in pure culture from diseased plants and identified by the Commonwealth Mycological Institute as *Cylindrocarpon effusum,* a new record for Mauritius.

Pine

493. Blight of pine seedlings, *Pestalotiopsis glandicola,* a new record for Mauritius, caused some damage at Vuillemin nursery in February.

Rose

494. Downy mildew, *Peronospora sparsa,* was recorded for the first time in April. Under favourable conditions of shade, humidity and poor ventilation, the disease caused a severe blight of tender leaves and buds and dieback of stems.

Carnation

495. M/45 at 2 gms per litre and Difolatan at 1½ gms per litre proved equally effective against carnation leaf spot, *Septoria dianthi.*

Gerbera

496. At Réduit, Septoria leaf spot, *Septoria gerbera,* was satisfactorily controlled with M/45 at 2 gms per litre or Maneb and Difolatan at 1 gm per litre.

Plant Inspection at Customs and Airport

497. 1,158 plant import permits and 348 phytosanitary certificates for plants exported were delivered at the Quarantine office, Cerné Dock, Port Louis, as well as 4,878 certificates of examination for articles imported.

Plant Quarantine

498. The following plants were grown under quarantine:

From seed to seed:

(i) Rice from Pakistan.
(ii) *Datura* sp. from the United Kingdom (for virus investigations).
(iii) *Physalis floridana* from the United Kingdom (for virus investigations).
(iv) Potato varieties from New South Wales.
(v) Sunflower from Israel.

Vegetative material:

(a) Citrus from Réunion
(b) Citrus from Morocco
(c) Citrus from India
(d) Grape vine from Réunion
(e) Grape vine from South Africa
(f) Roses from France (Detained pending certificates)
(g) Strawberry from France (Detained pending certificates)
(h) Gerbera from France (Detained pending certificates)

499. The potato variety Grano from New Zealand, showing necrosis of leaves suspected to be caused by a virus disease, was detained for a second quarantine period.

500. Of three grape vine plants introduced from South Africa and planted in quarantine, one was affected with a virus resembling fan leaf and two with erinose, which is not known to occur in Mauritius. The plants were destroyed.

501. The sugar-cane quarantine greenhouse was operated on behalf of the Department by the Mauritius Sugar Industry Research Institute. The following varieties were in quarantine:

Country of Origin	*Varieties*
Australia	Q. 61, 54 N. 7103 (Q. 79), 53 B. 45, Triton.
West Indies ...	B. 47-135, B. 47-258, B. 50-112, B. 54-142, B. 57-36, B. 57-150, D. 141-46, D. 37-45
Hawaii	H. 38-2915, H. 47-4991, H. 45-104, Mol. 5801, Mol. 6053, Mol. 5843, 51 N. G. 56, 51 N. G. 63.
Fiji	51 R. 124, 51 R. 182, 53 R. 4040 (Spartan) 53 R. 4132 (Homer).
United States ...	C. L. 41-223, C. L. 41-142, C. P. 29-116, C. P. 44-101, R. 469, P. R. 999.
India	Co. 475, Co. 527, Co. 740, Co. 997, Co. 1007.
Taiwan	F. 135, F. 148, F. 149, F. 150, F. 152.
Madagasikara ...	R. 447.

Varieties B.60-267 imported from the West Indies and Q.76 from Australia failed to germinate. Variety 51N.G.88 received from Hawaii was destroyed after showing leaf symptoms suggestive of mosaic.

Miscellaneous Diseases and Fungi

502. The following were recorded for the first time in 1965:

On apple leaves, leaf spot, *Glomerella cingulata* (Stonem.) Spauld. & Schrenk.

On banana leaves: *Phomopsis* sp. *Phaecaeptoria* sp.

On *Cardiospermum helicacabum* L.: leaf spot, *Cercospora Cardiospermi* Petch.

On *Citrus* sp.: leaf spot, *Pestalotiopsis* sp.

On coconut: bitten leaf, *Fusarium oxysporum* (Schleck) ex Fr.

On *Colocasia antiquorum* Schott.: Collar rot *Rhizoctonia* sp.

On *Crotalaria* sp. dieback, *Phomopsis* sp.

On cucumber: anthracnose, *Colletotrichum lagenarium* (Pass.) Ell. & Halst.

On cucumber: leaves: *Nigrospora sphaerica* (Sacc.) Mason.

On *Erythiospermum mauritiana* leaf spot. *Phyllosticta* sp.

On lettuce: leaf spot, *Pestalotiopsis* sp.

On *Mimosa* sp.: leaf spot, *Pestalotiopsis* sp.

On *Passiflora quadrangularis*: dieback, *Glomerella cingulata* (Stonem.) Spauld. & Schrenk.

On *Pentas lanceolata*: rust, *Puccinia pentadicola* Grove.

On *Phylianthus acidus*: rust, *Uredo phyllanthi-longifolii* Petch.

On pineapple: roots: *Cylindrocarpon effusum* Bugn.

On *Pinus* sp.: seedling blight, *Pestalotiopsis glandicola* (Cast.) Steyaert.

On *Plumbago capensis* Thumb.: roots: *Mucor hiemalis* Voehmer. *Cytospora* sp. *Geotrichum* sp. *Gliocladium* sp.

On Potato: leaf spot, *Cercospora concors* (Casp.) Sacc. (?).

On *Rhizophora mucronata* Lam.: leaf spot, *Phyllostictina* sp.

On rose: downy mildew, *Peronospora sparsa* Berk. dieback, *Fusarium* sp.

On sunflower: rust, *Puccinia helianthi* Schw.

On tea: dead branches, *Chalara* sp.

On *Vicia faba*: dieback, *Phoma* sp.

On *Zizyphus jujuba* Lam.: fruit rot, *Isariopsis* sp.

XIX. Entomology Division

Taxonomy

503. The Entomologist has prepared a series of scientific papers for publication but, funds being inadequate, it is feared that these will have to be published in overseas journals or bulletins.

(a) Hemiptera: Amongst the many rare insects collected during the year, the rediscovery of the toad-bug, *Nerthra rugosa* (Desj.), was of interest. The co-types of the species described some 128 years ago were re-discovered by the Entomologist in the Paris Museum in 1964. Photographs were shown to students of the College of Agriculture and Mr. Dayot, a 2nd year student, found the species again in decaying *Rhizophora* vegetation of coastal swamps.

(b) During his stay at the British Museum (Natural History), the Entomologist identified his personal collection of some 500 Mauritian Hemiptera. Extensive correspondence with world experts showed that a great many new genera and species exist.

(c) A hitherto unreported organ on the gula of *Laccotrophes* Nepidae is under study.

(d) A new list of Mascarene Orthoptera was in preparation; the list produced in 1951 by the Entomologist was out of print.

(e) Following repeated requests from world specialists, the list of Diptera, prepared by the Entomologist in 1957, was exhausted. A book on this order of insects was in course of preparation.

Biological Control

504. Following the visit to Mauritius at the beginning of the year of Dr. W. J. Simmonds, Director, Commonwealth Institute of Biological Control, the work of the division was re-orientated towards increasing biological control of pests, the Commonwealth Institute of Biological Control being now in a position to offer more promising natural enemies of crop pests.

505. Dr. Simmonds commented on the number of beneficial insects, parasites and other predators which have become successfully established, such as the predator snail, *Euglandina rosea*. The change in satus of pigeon-pea pod borers, since the introduction of West Indian parasites was sufficient to warrant an intensive survey of the present position.

506. A small room, air-conditioned at 25°C, 50-60 per cent R.H. has proved especially useful for breeding work. Various parasites and predators can now be successfully reared. A plan for a larger insectarium with three air-conditioned rooms has been prepared. The aim is to mass produce predators and parasites of the most important pests throughout the year.

Fruit fly and stable fly

507. A nucleus stock of *Pachycrepoideus vindemmiae* (Rondani) Hymenoptera (Braconidae) received from the Commonwealth Institute of Biological Control's West Indian station was bred successfully on various fruit fly puparia. *P. vindemmiae* has also been found to parasitise stable flies. Mass breeding of the species is being continued.

Oryctes rhinoceros

508. Biological control of the coconut beetle progressed satisfactorily. *Scolia oryctophaga* Coq., was established in the North Western parts of the island. For some unknown reason *S. oryctophaga* is more abundant in the southern and eastern parts and *O. rhinoceros* is now more common in the North and West. A search is being made in Malaya for *Scolia procer*, a scoliid wasp, which actually penetrates dead coconut palms to prey on Oryctes larvae.

509. The predator *Pherosophus sobrinus* (Coleoptera: Carabidae) was released in large numbers in localities where *Oryctes* abounds.

510. *Pheropsophus* was recovered in a number of places. Laboratory breeding of *Pheropsophus* has also been successful. The beetle has been observed feeding readily on a variety of larvae e.g., *Heliothis* caterpillars, *Phytalus* grubs and even *Cosmopolites* was readily attacked during its larval stage.

Potato Tuber-Moth

511. The potato tuber-moth, *Gnorimoschema operculella* Zell. (Lepidoptera, Gelachiidae), (or tobacco leaf miner) was common in most tobacco and potato fields. Over 3,000,000 egg parasites of *Copidosoma koehleri* Blanchard, bred in the laboratory, were liberated.

512. The locally occurring ichneumonid parasites, *Mythobia* sp. nr. *longiceps* was obtained in fair numbers from rearings of field collected caterpillars from the Bel Ombre area.

Heliothis Armigera Hb. (Lepidoptera, Noctuidae)

513. This noctuid is a major pest of tobacco leaves and tomato fruits. Biological control started with field liberations of two parasites imported from India: the tachimid fly, *Drino imberbis* Wied. and the ichneumonid, *Ecphoropsis perdistinctus* Vier.; the latter was recovered in the field on several occasions.

Biological Control of Weeds

514. Another Lantana insect, *Syngamia haemorrhoidalis* (Lepidoptera, Noctuidae), was introduced from Trinidad to complete the control of this weed in humid localities.

515. *Ludwigia octavalis* (Jacq.) subsp. *sessiflora* (Mich) (commonly referred to as ' Herbe des Mares or ' Herbe banga '). Attempts to control this troublesome weed by biological means were started under strict quarantine conditions, with introductions of *Haltica caerulea* Olivier (Coleoptera: Halticidae) from India. Both the adults and larvae feed on leaf tissue but show marked preference for *Jussiaea repens* L. Under local conditions, *Haltica* unfortunately feeds on seedling tobacco; release is not therefore contemplated.

Pesticides

516. *Ceratitis rosa* Karsch, the Natal fruit-fly, continued to be a severe pest of peach, loquat and guavas. Lebaycid gave excellent control of the flies only when applied regularly up to 15 days from harvest; applications of phosdrin have next to be made to protect the fruits to within 2 days of harvest. Because of the high costs, these treatments were not applicable on a large scale. Anthio (25 per cent formothion), a systemic organo-phosphorus insecticide of low mammalian toxicity gave some control of fruit flies.

Pineapple and Groundnut

517. The incidence of the mealy bug, *Dysmicoccus brevipes* (Cockerell) was lower than in past years. Experiments have shown that where groundnut is to be planted, spraying the field with 2½ lbs of 40 per cent Aldrin W.P. per acre and working the insecticides into the top 3 inches soil before planting was usually sufficient to keep the nuts free from attack. The same treatment should be made before planting pineapple; however, the planting material should also be dipped in a mixture of either Diazinon 60 per cent ML or Fenthion 55 per cent ML at 10 fluid oz in 40 gallons of water.

518. *Diaspis bromeliae* (Kern): Severe incidence of the pineapple scale was observed in fields of pineapple at Malinga (Pieter Both) and at Montagne Longue. Bidrin and Azodrin are being tested against this scale.

Citrus

519. A white fly, *Dialeurolonga (?) simplex* Tak. (which cannot be accurately identified so long as Takahasni's type-side is unobtainable) was extremely severe in its attacks on citrus in various localities. At Tamarin, Richelieu, Black River, Moka and Réduit all varieties of oranges, tangelos tangerines, grapefruit, lemon trees etc. were affected. The damage to the plants consists in leaf distortion and copious honey dew secretions promoting secondary growth of sooty moulds. Although Rogor (Perfektion), folithion and phosdrin were effective in controlling the pest, the residual effect does not last more than 5-6 days. PMP, an insecticide received from Japan was also partially effective. Bidrin appeared to be the best, its effect lasting 4-5 weeks. The recommended dosage for Bidrin is 5 ccs to 2 litres of water per medium size tree; the addition of 1 cc Teepol per litre of the spray mixture is desirable.

520. The psyllids *Diaphorina citri* Kuw and *Trioza merwei* (Petty) were abundant throughout the island causing severe distortion of young shoots and leaves of lime and lemon trees. Bidrin again appeared to be the most effective pesticide; further trials were in progress.

521. Very severe attacks of the citrus rust mites, *Phylloroptruta oleivora* (Ashm.) caused acute distortion of young shoots of orange and tangerine trees. Ethion, folidol and phosdrin were very effective. Treatment with Deinav 8 at 0.6 cc per litre gave excellent results.

522. Witches broom effect were commonly observed in the citrus orchards at Labourdonnais. Considerable damage in the form of severe scarring by the Citrus bud mite, *Brevipalpis phoenicis* (Geijskes) was reported in many localities.

Coconut

523. *Oryctes rhinoceros* has become well estblished from Pte aux Sables to Grand Gaube. Systematic destruction of dead logs was carried out. Occasionally tenrecs, *Centetes ecaudatus*, have been found inside dead coconut palms. Mr. G. A. Christie, University of Glasgow is engaged on research on the anatomy and physiology of this insectivorous animal and live material was sent to him. In view of the presence of tenrecs in dead palm and logs, all logs were first split lengthwise before being burnt. Young coconut palms can usefully be treated with 2 per cent dipterex granules; when placed in the leaf axils of young palms, considerable reduction in attacks of the beetle occurred. *Oryctes* damage was not confined to coconuts. At Pamplemousses gardens, among other palms attacked were the following: *Dictyosperma album* Balf. var. *furfuraceum* Bailey., *Phoenix dactylifera* L., *Roystonea clata* (Bartr.) and *Syagrus coronata* Beccari. The tenuipalpid mite *Raoiella indica* Hirst severely affected young coconut palms in the drier localities of the island. Although successfully controlled with metasystox it can even be more effectively controlled and at less cost by Delnav 8. Concentrations as low as 0.5 — 0.6 cc per litre were sufficient.

524. A caterpillar feeding on leaflet extremities of coconut palms and causing pronounced die-back was studied. Damage was especially severe on Malayan Dwarf coconut palms. Phosdrin applications did not control the pest. Bidrin on the other hand was effective.

Tobacco

525. The leaf-miner, *Gnorimoschema opercullella* Zell. was again troublesome on newly transplanted tobacco; heavy recruiting was at times necessary following severe attacks of the pest. SD 9129 (Azodrin) at $\frac{1}{2}$ lb per acre was being tried in an attempt to replace Phosdrin which, though exerting control, must be repeatedly applied at short intervals.

526. Against *Heliothis armigera* Hb and *Agrotis ipsilon* Huf. Toxaphene-DDT mixture (supplied by Hercules Powder Cy. Inc.) at the rate of 2 litres per arpent appeared to be the best form of treatment. Trials were in progress. *Aphis grossypii* Glover was efficiently controlled by Torbidan at 2 litres per arpent.

Potato

527. The climbing cutworm, *Plusia orichalcea* F., threatened 8 acres of potato crop at Beau Plan Sugar Estate. Several insecticide trials were carried out. It was apparent that in addition to phosdrin and telodrin, bidrin was also capable of arresting heavy infestations of this pest. Toxaphene-DDT applications were equally good. A severe aphid attack was completely checked by Torbidan at 2 litres per arpent.

528. In general, phosdrin and bidrin were intensively used to control severe attacks of pests on various crops with spectacular results. The supremacy of these chemicals over other pesticides, so far as pest control and safety of consumers were concerned, was such that the hazards they presented to spraying operators were fully compensated. Residue data concerning bidrin were being investigated; the following advice may have to be revised as crops may well support shorter pre-harvest intervals than those listed below:

Directions for Application of Bidrin

Beans: Do not apply within 15 days of harvest.
Citrus: Do not apply within 30 days of harvest.
Potatoes: Do not apply within 16 days of harvest. (Foliage should not be fed to animals).
Strawberries: Do not apply within 35 days of harvest.
Tomatoes: Do not apply within 14 days of harvest.
Lettuce: Do not apply within 17 days of harvest.

Tea

529. One of the best miticides tested was Delnav 8. It controlled effectively the broad mite, *Hemitrarsonemus latus* Banks. A spray at the rate of 1 lb 18.5 per cent difocol per 40 gallons of water, as a full cover spray, gave excellent control. In the latter case the safety period is one week.

Hibiscus

530. *Hibiscus psyllid*: *Mesohomatoma* sp. (? *lutheri* Enderlein) caused damage on young Hibiscus shoots by removal of sap. An abnormally high incidence of the psyllid with attendant defoliation was reported in gardens at Rose Hill. Heavily infested plants, due to the waxy secretions of the nymphs, appeared to be dusted with snow. Nicotine sulphate at 0.2 per cent gave excellent control.

Miscellaneous Pests

531. *Hypsipila* sp. *(Lepidoptera,* Pyraustidae) caused severe damage to young mahogany trees at Moulin à Poudre and at Bras d'Eau.

532. The mealy bug, *Icerya seychellarum* Wesw., was abundant on *Casuarina* at Beau Vallon and elsewhere on mango and avocado. The dipterous parasite, *Cryptochaetum monophlebi* Ske., seemed to have diminished considerably through hyperparasitism. The common household pest, *Technomyrmex detorquens* Walker, played an important role in limiting development of predators of this mealy bug.

533. The coccid, *Eriococcus araucariae* Mask., severely infested *Araucaria* seedlings at Réduit and Pailles nurseries and old trees at Moulin à Poudre. Phosdrin and Folithion were only moderately effective in checking the pest.

534. Stable flies, *Stomoxys spp.*, were extremely abundant due to an exceptionally wet winter. Under Mauritian conditions, Vapona pest strips do not give satisfactory control. Baytex/DDT on walls was still the most satisfactory form of control. Experiments with Baygon (2-iso-propoxy-phenyl-n-methyl-carbamate) have been commenced.

Sheep Nostril Fly

535. *Oestrus ovis* L. is now causing serious trouble in many localities. Field tests with Neguvon (Dylox) were in progress.

536. Other tests were commenced to assess the value of the following pesticides in the control of crop and animal pests: Imidan, garrathion, ethion, delnav 8, azodrin, folithion, trithion, bidrin and vapona pest strips, all belonging to the organo-phosphorus group.

537. Imidan and ethion have contact insecticide/acaricide properties and were of moderate toxicity. They have been tested against various mites; imidan has given satisfactory control of *Raoiella* on coconut and ethion has been fairly effective in controlling the citrus rust mite, *Phyllocoptruta oleivora* (Ashm.).

538. Tests were in progress with garrathion for the control of ticks and *Stomoxys* flies on cattle.

539. Azodrin and bidrin were two systemic insecticides with long residual properties of value in controlling orchard pests. Both have already given excellent control of scale insects and *Cratopus* beetles on citrus. On citrus, monthly sprayings with bidrin appeared to control most pests.

540. Torbidan at 2 litres per arpent has been found useful against a wide range of pests such as various aphids, caterpillars of *Heliothis, Agrotis* etc.

541. Vapona pest strips (resin bands impregnated with DDVP) have been found to be useful in bookcases against such book-pests as bookworms, silverfish, cockroaches etc.

Machinery

542. "Solo Junior" and "Gloria" mist sprayers were tested under hard-working conditions and performed satisfactorily; their main advantages were their lightness and low cost being primarily designed for ground crops.

543. An insect-killing machine, the "Insectocutor" was undergoing tests against stable flies. Insects are attracted on to an electrified grid by means of two tubes emitting "Black light" and are killed by the electric current. Bulbs emitting red and yellow light have been ordered for trials in the insectocutor against stable flies.

Taxicological Hazards

544. *(a)* Delayed *Dermatitis.*—Dibrom and Eradex appeared to cause delayed dermatitis: the former also occasioned sneezing in some workers. These insecticides are due for replacement shortly.

(b) Magatox (fluoro acetamide) was not recommended for use in Mauritius and importers of the product have been asked to co-operate by refusing sales to the public.

College of Agriculture

545. Lectures in Agricultural Entomology and Zoology were given by the Entomologist to second year students and the following films were shown by arrangement with Bayer and Shell International:

(1) The Rival World
(2) Darwin and the insects of Brazil
(3) How to spray
(4) Fruit spraying
(5) Protection of fruit
(6) Malaria
(7) Weed Control
(8) Greenhouse whitefly
(9) *Crop spraying :*
(a) Grassland
(b) Introduction to weedkillers
(c) Spraying practice
(10) The Ruthless one
(11) Redspider
(13) Bilharzia

International Advisory Committee on Biological Control

546. The Entomologist is a member of the International Advisory Committee on Biological Control, an organisation whose aim is to integrate research on the control of pests by means of predators and parasites.

XX. Agricultural Chemistry

Feedstuffs

547. The raw materials received at the Livestock Feed Factory for the preparation of animal feeds were checked on reception at the factory. The prepared feeds were also analysed.

Fodder

548. Different strains of *Setaria* were sampled and analysed for their protein content with a view to studying their behaviour with different fertilizer treatments and different spacings.

Milk

549. Fewer checks were carried out on milk from Curepipe livestock breeding station. The normal range of 3.5 to 4.5 per cent butter fat was found in 65 per cent of the samples taken.

550. At the request of the Agricultural Marketing Board, the officers selected to control purchases of milk at the milk collecting centres were trained on the tests to be carried out at the centres in order to ascertain the quality of milk with respect to appearance, smell, acidity and specific gravity.

Silage

551. A new method using column chromatography for the separation of organic acids of cane silage was applied with success. The method is very tedious and is not recommended for routine analysis. The following organic acids have been separated quantitatively: formic, acetic, propionic, butyric and lactic. Some results are tabulated below. It is interesting to note that

the conditions prevailing during fermentation seem to favour lactic acid formation rather than butyric, which is indicative of good silage.

Locality	*Type*	*Organic acids (% D.M.)*				
		Formic	*Acetic*	*Propionic*	*Butyric*	*Lactic*
Palmar ...	pit	1.0	3.0	—	—	4.0
Palmar ...	Trench	1.7	2.1	—	—	—
Clairfonds ...	pit	2.8	1.6	—	—	0.6
Riv. des Anguilles ...	pit	0.6	2.3	0.5	4.7	4.8
Plaisance ...	pit	3.2	2.0	—	—	1.2
Curepipe ...	pit	2.6	1.3	—	—	1.6
Mapou ...	pit	2.6	1.9	—	—	—

Pesticides

552. A preliminary study was made on the behaviour of aldrin residues in plants. Carrots and beans were treated with aldrin (1 cc per litre), by spraying as well as by watering. At intervals of five days the vegetables were sampled and analysed. The chlorinated residue levels expressed as ppm aldrin found in the vegetables were as follows:

	5 days	*10 days*	*15 days*
Carrots : watered ...	4.5	5.8	2.2
sprayed ...	2.0	0.4	4.6
Beans : watered ...	6.7	7.5	2.9
sprayed ...	7.7	7.7	2.9

It was not possible to establish whether the chlorinated residues were actually aldrin. It is believed that aldrin is converted to the more toxic product dieldrin, especially in carrots. Identification by paper chromatography was not tried.

Compost

553. Compost processed from town refuse is of recent development, the importance of which lies in the fact that household refuse is being disposed of in a sanitary way and at the same time a product rich in organic matter is being obtained, which should prove useful in agriculture. The analysis of the compost was started with a view to help improving the type of product to be placed on the market. In the light of preliminary checks, important modifications were being brought about to the treatment of the refuse for compost making.

Scums

554. Experiments were carried out on the de-watering of defecation scums to be utilised eventually as animal feed. Samples were collected at Flacq United Estates Limited's factory and pressed mechanically. The water content of the scum fell down from about 80 per cent on compressing to about 60 per cent. It is believed that such treatment will bring down eventually the cost of drying the scum on an industrial scale.

Miscellaneous

555. Various fertilisers, simple and compound, were checked. On water, tests for salinity were carried out for irrigation purposes and more detailed chemical tests for boiler feed purposes.

XXI. Engineering Division

Servicing of Departmental Machinery and Vehicles

556. The servicing, repair and maintenance of all departmental vehicles, tractors and machinery were carried out at the Central Workshop. Complete service records were kept. The following servicing and repairs were carried out:

Vehicles	316
Tractors	161
Other agricultural machinery ...	229
Total ...	776

Two lorries and a jeep were completely overhauled and spray painted.

557. The following equipment and accessories were designed, assembled, fabricated, or installed:

(a) Six sliding doors and six ventilators were designed and manufactured for the new raw material store at the Livestock Feed Factory.

(b) A blower was designed and manufactured for potato storage trials.

(c) A mist propagator was installed at the Tea experiment station, Wooton.

(d) Two chaff cutters were assembled.

(e) Two frames and four canvas canopies for tractors were manufactured.

(f) Two tarpaulins, six ventilator hoods and two cushions for a jeep were manufactured out of canvas.

(g) Manufacture of one complete wooden body for lorry, and one wooden body for trailer.

(h) Repairs to wooden bodies of two trailers and two lorries.

(i) Manufacture of thirty-three tables, fifty-three stools, one armchair and four cupboards.

(j) Four gates were made out of galvanised iron pipes.

(k) Seven hundred and fifty foundation and other bolts, hinges, brackets and supports were made.

Buildings

558. The following buildings were completed and handed over:

(1) A raw material store at the Livestock Feed Factory;

(2) A shed at Fort George, adjacent to the Fumigation Plant.

(3) A binder's workshop at Réduit.

(4) A greenhouse to accommodate another Bahnson humidifier at Wooton.

559. Twenty-five milk collecting centres were commissioned for the Agricultural Marketing Board. Of these, 15 were constructed by contractors, 8 by the division and the remaining 2 were conversions from former railway sheds. 21 of the centres were equipped with Prestcold compressors.

560. A new steel tank to hold 400 metric tons of molasses was completed at the Livestock Feed Factory.

561. A waggon shed, 450 ft long, at Port Louis, was dismantled and conveyed to Richelieu experiment station.

562. The following minor works were also carried out:

(a) Repairs to Livestock Assistant's quarters at Pamplemousses;

(b) Repairs to Fisheries Guard's quarters at Baie du Cap.

(c) Repairs to a water closet at Réduit,

(d) Repairs to Assistant Agricultural Engineer's quarters at Richelieu.

(e) Repairs to Roche Bois quarantine station.

563. Work was commenced on:

(i) Conversion of byre into offices at the division of Veterinary Services;

(ii) Repairs to greenhouses at Réduit.

Livestock Feed Factory

564. 4,548 tons of various animal feeds were manufactured from such products as wheat bran, maize flour, rice, maize, groundnut cake, cotton seed cake, pollard, meat meal, fish meal, oats, lucerne meal, bone meal, cod liver oil, skimmed milk powder, molasses, bagasse, wheat flour, broad beans, scums, beef fat, trelcovite, trelco D 3, trelco nitrofurans, trelco nitrofurazone, amprolmix UK, nutrigain, T.M. 10 and salt.

565. Fifteen different kinds of animal feeds were offered for sale, namely poultry feed, chick feed, cow feed loose, cow feed cubed, calf feed, bull feed, new cattle feed, pig grower feed, pig starter feed, creep feed, horse feed, special horse feed, scums feed, turkeys chick feed and broiler feed.

566. 4.668 tons of livestock feeds were sold at the Livestock Feed Factory and the Extension Shop, Rose Hill. A statement of revenue and expenditure is given at Appendix "E".

XXII. Fisheries

567. The duties of the division were to enforce the provisions of the law regulating fisheries in territorial waters and to study, recommend and implement such measures as may be necessary to improve the production and protection of fish. It also collects statistical data, takes all steps necessary to improve the efficiency of the industry and the welfare of the fishing community.

568. The division was reorganised with effect from the 3rd August, 1965 .Prior to this reorganisation, nearly all the staff was posted at the thirteen Fisheries Posts located in the main fishing communities on the coast. The guards therefore had to take part in all the duties allocated to the division. This arrangement was inefficient as regards the control of fraud, as the movements of the personnel could easily be observed by fishermen. It also resulted in an unnecessary duplication of effort by the supervisory staff.

569. Three " Flying Squads " were therefore created, under the direction of one inspector who acted as co-ordinator, and of two Sub-Inspectors, each in charge of one squad. The personnel for these squads, each consisting of four men and one inspector, motorised and equipped with one outboard motor, was pulled back from the coast, and took up residence up country from where they could easily reach any point of the coast for day or night patrols.

570. This reorganisation has been most effective. In the first month of operation, no less than fifteen illegal nets were seized. In the following months, there was a considerable reduction in the number of nets seized, all that were seized being new or very little used, indicating that very little illegal net fishing was taking place. The greater mobility of these flying squads had led to far greater control. The possibility of a swift concentration of forces has proved useful on several occasions, when searches were carried out in fishing villages or when illegal nets, with large fishing crews, had to be seized.

Detection of Fraud

571. The results of the control exercised by the Inspectorate were as follows:

Year	*Cases prosecuted*	*Convictions*	*Total contraventions*	*Illegal nets*	*Explosives*	*Total of fines Rs*
1961	248	243	325	100	27	9,971.00
1962	195	192	270	61	35	4,950.00
1963	213	199	279	84	22	6,657.00
1964	144	230	185	76	19	5,915.00
1965	89	112	140	36	9	3,911.00

Twenty cases were pending at the 31st December.

Sharks Captured

572. 1,699 sharks, 939 males and 760 females, were captured during the year.

Boats

573. Several new boats were designed and purchased by the division in 1965.

574. A new boat was built, to the specifications of the Canadian Technical Adviser, its dimension being 22 feet long by 6 feet wide with a wide transom and flat bottom. This boat was designed for shallow water operation with an outboard motor. The boat proved seaworthy and very manoeuvrable, but inefficient in its power requirements and difficult to pole, which makes it unsuitable for most fisheries protection work.

575. A fibreglass reinforced plastic " Boston whaler " was built locally. This boat, 13½ feet long, was built with a self baling cockpit which makes it virtually unsinkable. It has proved fast, seaworthy and manoeuvrable in its trials, although rather underpowered with the 18 hp motor at present used.

576. A 19 ft pirogue, with a particularly shallow draft, has been built but has not yet been tested.

Construction of Fisheries Posts and Fish Sheds

577. Three fish sheds were built by the Ministry of Works at Pointe aux Piments, Grand Bay and Grand River South East and were handed over to the division in August.

Sea Fishing

578. The total catch landed was slightly lower than in 1964 and 355 tons less than in 1963. The proportion of the catch taken by basket traps and the quantity of octopii landed were slightly greater than in 1964, but the landings by all other methods were reduced. An increase in the catch of cordonniers was observed.

579. The proportion of the catch taken by the large seine nets again fell to the same level as for 1963. This was particularly noticeable in the reserves where there has been a steady decrease in the catch landed. This fall in catches appeared to be in direct correlation with the number of net-day fishing permitted annually in the reserves and points inescapably to the fact that a large degree of overfishing has taken place. It is expected that if this trend is allowed to continue, the catch per net-day's fishing in the reserves will shortly reach a level comparable to that in the lagoon, where fishing is unrestricted. The reserves will then no longer have any value as breeding grounds and sanctuaries for fish. This will no doubt have serious repercussions on the fish stocks of the island, with consequent hardship to the fishing population. The Fisheries Advisory Committee has recommended that only one day's fishing a year should be allowed in the reserves by large nets. It is of the utmost importance to the future of the fishing industry that this recommendation should be implemented forthwith, especially if it is borne in mind that only 27 per cent of the catch landed is brought in by large seine nets.

580. The controlled catch per quarter in metric tons was as follows:

	1961	*1962*	*1963*	*1964*	*1965*
1st Quarter	451.4	284.2	372.1	296.0	284.0
2nd Quarter	427.7	334.4	436.6	348.0	299.0
3rd Quarter	277.3	257.4	322.2	204.0	214.0
4th Quarter	331.0	339.3	344.0	297.0	322.0
Total ...	1,487.4	1,215.3	1,474.9	1,145.0	1,119.0

The average for 1961-65 was 1,288.3 metric tons.

581. The catch landed by net fisheries was as follows:

Year	*Catch (metric tons)*	*% of Total Controlled catch*
1961	413	27.8
1962	414	34.0
1963	396	26.8
1964	327	28.5
1965	300	26.8

582. The contribution to the catch by the various modes of fishing was as follows:

Catch in tons

	Average		*Catch*				
	1951–55	*1956–60*	*1961*	*1962*	*1963*	*1964*	*1965*
Nets	410	363	414	414	396	327	301
Basket traps	715	628	596	408	567	394	403
Lines	247	275	248	183	230	223	196
Octopii	238	219	193	181	237	172	196
Lobsters	27	28	25	17	25	19	18
Harpoon fish	—	7	11	12	19	10	5
TOTAL ...	1,637	1,520	1,487	1,215	1,474	1,145	1,119

The average for 1961-65 was 1,288.3 metric tons.

583. The distribution of the fish species caught was as follows:

Species	*kgs*
Capitaine, *Lethrinus nebulosus* ...	22,283
Dame Berry, *Lethrinus mahsena* ...	44,741
Battardet, *Lethrinus harak* ...	16,437
Caya, *Lethrinus reticulatus* ...	18,630
Cordonniers, *Siganus* spp.	212,702
Rougets, *Mullus*	45,793
Mullets, *Mugiloidae*	33,171
Vieilles, *Scnanidae*	58,144
Licornes, *Naso* spp.	106,894
Octopii	195,708
Lobsters, *Panulirus* spp. ...	18,258
Other species of fish	346,786
TOTAL	1,119,547

584. The total landings averaged over 5-year periods were as follows:

Years	*Total catch* (metric tons)	*Deviation in metric tons from the average*
1946–50	1,492	+ 8
1951–55	1,637	+ 153
1956–60	1,520	+ 36
1961–65	1,288	− 196

585. The drop in the average for 1961-65, which appeared to be a continuing trend, if yearly landings for this period are examined cannot be attributed to bad weather or a lessening of effort, the latter has in fact increased considerably. The only reasonable explanation of this reduction is that fish stocks are being heavily depleted by overfishing. The fact that the share of the seine nets is falling is also significant, as this suggests that the species fished predominantly by the seine nets are more affected. The general introduction of gill nets in substitution for seine nets, which is at present being examined, may well be a solution to this problem.

586. A Japanese vessel was chartered and outfitted by two Mauritian Companies and sailed to the Nazareth Bank where the Mauritian crew fished for 13 days, 19 tons and 285 kgs of fish being caught. Although the results achieved were not up to the expectations of the promotors, valuable experience was gained. The enthusiasm of the fishermen was particularly encouraging.

Shark Investigation

587. The initial phase of this investigation has consisted of devising and developing efficient shark fishing gear, processing shark meat at different salt contents with the view to establishing a definite processing technique, of compiling statistics on weights of ready-to-process meat in relation to gross weights and, by extrapolation, to establish a purchasing standard based on lengths.

588. These objectives have been attained and a shark may now be purchased on the basis of its length with the knowledge that it represents a given weight of ready-to-process meat and fins.

589. The second phase began in August and consists of extension work. Fishermen have been shown how to set and operate shark lines and have been urged to capture shark. This resulted in 53 sharks being purchased up to the end of December.

590. During that period, labour was not exclusively devoted to the processing of shark, but to a rather wide range of activities such as fishing, the manufacture of lines, sinkers and the care and trial of different types of gear. The information required for the economic operation of a shark industry would be obtained from the evaluation of the processing capacity per day (slicing, salting and drying) of trained labour. This investigation has furnished this needed information; experience has indicated that an experienced labourer, with a helper, can process 5 sharks per day. Therefore the processing of 53 sharks, for the purpose of economic evaluation, is assumed to represent 10 days work. On the basis of 5 sharks of the average length processed during these actual operations per day, labour would consist of one processor, a helper and a chauffeur at a cost of about Rs 14.00 per day. To this must be added transportation costs. A motor van travelled 2,375 miles at 24.90 miles per gallon of petrol to collect them. For all practical purposes it consumed 96 gallons of petrol and 3 gallons of oil.

96 gallons petrol @ Rs 2.65	Rs 254.40
3 gallons oil @ Rs 2.65	7.95
Depreciation @ Re. 0.10 per mile ...	237.50
TOTAL transportation charges	499.85

On the basis of ten days work, expenses and revenue could be summarized as follows:

Expenditure	Rs c	*Revenue*	Rs c
Cost of 53 sharks ...	934.00	Sale of dried meat @ 75 cents per lb ...	1,197.00
Cost of salt	77.00		
Cost of labour ...	140.00	Sale of 86 lbs of dry fins @ Rs 6.00 per lb ...	516.00
Cost of transport ...	500.00		
TOTAL ...	1,651.00	TOTAL ...	1,713.00

591. Under these conditions an enterprise of this nature could be interesting to an individual only if the number of sharks processed per day were increased substantially and/or the wholesale price of the finished product were raised considerably.

592. However, if these operations were conducted by a group of fishermen, on a co-operative basis, practising their trade exclusively at fishing and paying the necessary trained labour for processing 5 sharks per day, repairing nets and other equipment, a profit of a substantial order could be realised in addition to the profit derived from their normal fishing activities.

593. This project is intended as a contribution to a project of wider scope, involving groups of fishermen practising their trade at seasonal fishing with gill-nets, basket traps, hand lines, etc.

Gill-Nets

594. Since August in one case and September in the other, two gill-nets, 900 and 600 ft in length respectively, were loaned to the Sainte-Cécile Co-operative Society at Bambous Virieux for experimental purposes on the condition that they abandon their large seine temporarily and fish with gill-nets only.

595. Nine fishermen, of which 5 operated the 900 ft and 4 the 600 ft net, of 10 cm mesh, appeared to be quite happy with the results and prefer fishing with gill-nets rather than with their large seine, especially during the winter season, when the sea is rough and favourable to gill-net fishing. It was also possible to compare the results from a 900 ft and a 600 ft net, which together represent the length of an average large seine operating in an area which used to be fished by a single large seine with the same fishing crew.

596. The 900 ft net landed 1,196 lbs of fish in 22 fishing days in August, 1,273 lbs in 24 fishing days in September, 930 lbs in 24 fishing days in October, 812 lbs in 19 fishing days in November and 584 lbs in 19 fishing days in December.

597. The 600 ft net landed 306 lbs of fish in 6 fishing days in September, 626 lbs in 22 fishing days in October, 560 lbs in 20 fishing days in December.

598. The daily average landings per fisherman operating the 900 ft net were 10 lbs in August, 9 lbs in September, 8 lbs in October, 9 lbs in November and 6 lbs in December. The daily average landings per fisherman operating the 600 ft net were 7 lbs in October, 9 lbs in November and 7 lbs in December.

599. The 900 ft net caught 4,795 lbs of fish in 108 fishing days whereas the 600 ft net caught 2,026 lbs in 64 fishing days. Although these figures are yet too few and the experiment not yet of sufficient duration to warrant a firm conclusion, they at least lead to the speculation that on the basis of 200 fishing days per calendar year, the 900 ft net would have landed 4.4 tons and the 600 ft net 3.1 tons of fish; giving this co-operative a potential of at least 7 tons annually, a figure which compares quite favourably with the best catches made with large seines and with the added advantage that immature fish are left in the sea to grow and reproduce, only mature fish being taken, because of the mesh size of the gill-net.

600. During the year, recommendations regarding the use of gill-nets in Mauritius were formulated.

Fish Farming

601. The urgency to increase local production of protein food, by exploiting every possible water resource of the island, was apparent. However, there still will remain the need to supply some luxury products for local consumption and export.

602. The fish farm (Beau Vallon barachois) at Mahebourg, has been established with a view to supplying preliminary answers to both the above concepts by attempting to demonstrate the possibility of profitably raising fish in a barachois at the same time catering for the luxury trade by raising crustacae and other exotic marine products.

603. This farm is yet young, its inception dating back to late 1964. It is gradually being constituted from an abandoned and depleted mass of semi-stagnant water. It is now connected to the sea by means of a grill-gate. A second gate is being opened, to facilitate a larger mass movement of water and to promote migrations of fry from without to within.

604. It consists of three sections of which one is a basin 90×100 feet for observing growth rates, breeding and spawning habits of the crab, *Scilla serrata*. Another section, which is of an area of approximately half an acre, is an enclosure containing several hundred crabs and some crawfish under observation. In both cases the crustacea are fed with scrap fish (massouran) which is produced in large quantities in all areas of the farm.

605. The third section or main fish farm, of an area of roughly twenty-five acres, was stocked early in 1965 with Cordonnier, Breton, Gueule Pavée and Batardet. An inward migration of small mullets has taken place late this year. Also a large school of small Cordonnier was noted, indicating either that these are a generation of the present stock or a migration from the sea. In either case, there is an indication that, with respect to that species of fish, the farm may be self sustaining.

606. Cordonnier Breton and Batardet are presently nearing exploitable size and will be exploited commercially early in 1966. For that purpose two traps have been designed and set up for selective fishing. The traps can be so equipped as to catch the size of fish desired. It is hoped that, after further experiments, similar ones will be introduced around the coast for commercial fishing.

607. The biology of *Scilla serrata* is little known. For that reason, techniques for observing behaviour must be established. Although a mating season was observed from September to December and berried females were seen in Novmber and December and some were observed to shed their eggs, it was not possible, with the present facilities, to determine the lapse of time between mating, berried condition, shedding of eggs and hatching. The failure to collect larvae, under haphazard control is no indication that they cannot be produced in captivity. Time and further investigation may supply an answer. The results could lead to the establishment of small hatcheries in the vicinity of fish farms, to promote greater yields by protecting the young

from predators until such time as they are able to fend for themselves. One observation of importance was that small crabs, which were introduced into the farm, have grown from a mere couple of ounces to one and a half lbs in fifteen months.

608. This farm appeared to be also a favourable habitat for another species, the blue crab. The potential is unknown, but they are numerous. Several pounds have been frozen and distributed for making crab bouillon. The market in this respect seemed promising.

609. Several crawfish, of which one was a berried female, were introduced into one section of the farm for observation.

Oysters

610. The concept underlying oyster culture is based on the fact that the present wild oyster, picked from rocks and mangroves, is not an ideal exportable product. It spends most of its energy building up a thick heavy shell to cling to its host at the expense of meat. A cultured oyster, growing in a tray, should manufacture less shell and more meat, should weigh less and hence cost less in transportation.

611. In July, it was definitely established that the oysters which had been kept in the Beau Vallon fish farm were not in a favourable environment for either growth or reproduction. The salinity of the water was too high and as much as 50 per cent died. They were then transferred to an area at Vieux Grand Port, where it has been established that there exist some of the best conditions for oyster culture on the island. Since the transfer, mortality has been nil and definite growth has been observed.

612. A small experimental oyster farm has therefore been set up at Vieux Grand Port to follow growth rates and as a demonstration centre for those who are interested in similar activities.

Fishing Boats

613. Since one of the objectives of the fisheries development programme is to mechanise the fisheries of Mauritius, the traditional pirogue must gradually give way to a more comfortable and manoeuvrable inshore fishing boat. Usually the fisherman knows where the fish are and where the adjacent banks are situated, but with his little pirogue he often cannot get there. With the advent of the outboard motor, the pirogue as presently constructed awaits substitution and the fisherman must be helped by demonstration to evolve a more suitable boat. In addition, the fisherman of Mauritius is an individualist who has not yet accepted that the economics of fishing depends to a large extent on group effort and co-operation.

614. Four model experimental fishing boats have been constructed, each representing a modification of the last boat based on experience. These boats are 22 feet over all length, with a six ft. beam at centre and shallow draft of the order of one foot. A fifth one is in the offing with slight modifications for the purpose of submitting this model to a naval draughtsman to draw out a design and specifications for any future construction by any boat builder on the island.

615. These boats are without question the envy of all fishermen. But none as an individual can at present afford to purchase one. It is hoped however that some interested and serious fishermen will accept the idea that a group of five, each providing about Rs 1,000 would have a fully mechanized boat, capable of fishing in most weathers in greater comfort. Under present conditions, five individual pirogues and five outboard motors represent a capital investment of approximately Rs 20,000 shared by 5 men in contrast with one boat and one outboard motor representing approximately Rs 5,000, shared by the same number of men.

XXIII. Rodrigues

General

616. Cyclone ' Freda ' resulted in the island experiencing good rains in January, early plantings of maize were made and reasonably good crops were harvested in April. A very dry September adversely affected the yield of onions, beans and second season maize crops. Dry conditions continued to the end of the year and no rain had fallen preventing the early planting of the 1966 maize crop.

Production and Marketing

617. The m.v. " Mauritius " made 14 trips to the island and on the 27th October, 1965, the Japanese fishing boat ' Kaise Maru No. 5 ' was specially chartered by the Agricultural Marketing Board to transport about 160 tons of onions to Mauritius. The exports were as follows:

Date	*Cattle*	*Pigs*	*Sheep & Goats*	*Crates of Fowls*	*Onions (bags)*	*Garlic (bags)*	*Acacia (bags)*	*Salt Fish (bales)*	*Octopus (bales)*
4. 1.65 ...	1	95	194	77	—	—	63	98	51
10. 2.65 ...	33	271	390	54	—	—	—	163	103
17. 2.65 ...	—	—	59	2	—	—	27	50	38
20. 4.65 ...	67	400	700	81	—	—	189	472	281
1. 6.65 ...	46	530	523	163	—	—	39	222	254
20. 6.65 ...	—	—	—	—	—	—	—	98	25
9. 7.65 ...	141	529	481	15	—	—	93	175	204
7. 8.65 ...	64	452	379	9	—	—	—	197	—
...	—	35	—	—	—	—	—	55	—
18. 9.65 ...	124	588	166	30	1,906	119	64	173	125
27.10.65 ...	—	—	—	—	3,194	—	—	—	—
6.11.65 ...	99	617	323	50	3,821	39	—	427	92
13.11.65 ...	—	72	—	41	—	17	201	22	—
28.11.65 ...	—	—	—	12	—	—	—	48	15
29.12.65 ..	28	610	499	203	319	1	72	178	35
28.12.65 ...	28	317	610	124	—	7	41	222	24
Total ...	631	4,516	4,324	861	9,240 or 462 tons	183 or 14 tons	789 or 79 tons	2,600	1,247

618. The approximate value of these exports was:

	Rs
631 cattle at Rs 250 each	156,000
4,516 pigs at Rs 90 per head	406,440
4,324 sheep and goats at Rs 40 per head ...	172,960
861 crates of fowls at Rs 174 per crate ...	149,814
462 tons onions at Rs 600 per ton ...	277,200
14 tons garlic at Rs 1,000 per ton ...	14,000
79 tons acacia at Rs 460 per ton ...	36,340
2,600 bales salt fish at 140 lbs at 90 cs per lb	327,600
1,247 bales octopus at 140 lbs at Re 1.00 per lb	174,580
TOTAL ...	1,714,934

619. The following table compares the total exports as from 1960:

	1960	*1961*	*1962*	*1963*	*1964*	*1965*
Cattle	615	720	1,076	579	616	631
Sheep & Goats ...	6,133	5,654	5,963	5,745	5,056	4,324
Poultry (crates) ...	728	650	636	706	550	861
Pigs	2,908	2,258	2,858	3,542	4,656	4,516
Onions & Garlics (tons)	258	150	51½	286	518	476
Acacia (tons)	235	75	38	130	81	79
Salt fish (bales) ...	2,712	2,450	2,800	3,157	3,335	2,600
Octopus (bales) ...	1,475	1,090	1,570	948	950	1,247
TOTAL VALUE Rs ...	1,586,562	1,297,555	1,484,810	1,566,787	1,770,775	1,714,934

620. The value of the exports for each year has been calculated by using those quoted above for 1965. There was an increase in the consumption of fish and meat in the island due to the young increasing population.

621. The buying, grading, weighing and packing of the 160 tons of onions, despatchd on the ' Kaise Maru No. 5 ' was done for the Agricultural Marketing Board by a completely local staff. Normally a buying agent is employed by the Board who comes from Mauritius to perform this function. It appeared that the economy achieved by using local staff would increase the return to the island producers.

LAND DEVELOPMENT AND SETTLEMENT

622. The problems and methods being used to overcome them have been given in detail in the 1963 and 1964 annual reports and the work done during the year 1965 has followed this pattern. Steady progress was made and, by the end of 1965, a further 300 acres of land were terraced, 90 acres

paddocked for rotational grazing and about 17,000 feet of storm discharge canals were constructed. There were 1,259 vegetable plots, 887 lowland farms, 1,221 unit farms and 57 dairy farms available for leasing at the end of 1965. It is intended to complete capital work on this area by June, 1966, the date on which the present development programme ends.

Re-afforestation

623. The division continued the work of maintaining and planting protective forests on hilltops and steep slopes and established a further 320 acres, bringing the area so planted to about 1,870 acres. Unfortunately, the dry weather experienced towards the end of the year resulted in 75 acres being damaged by fire.

Farm Water Supplies

624. The development and maintenance of the island's farm water supply continued satisfactorily. There are now 37 dams, 18 water storage tanks and 6 diesel pumping plants installed. Distribution of piping laid to-date is as follows:

Year	*½" Pipe ft*	*¾" Pipe ft*	*1" Pipe ft*	*1½" Pipe ft*	*2" Pipe ft*	*Total ft*
1961	1,633	—	8,906	—	6,384	16,923
1962	5,100	3,303	22,985	5,721	6,321	43,430
1963	6,274	6,641	11,384	4,589	14,929	43,817
1964	7,334	7,210	10,712	5,000	10,185	40,441
1965	12,100	180	19,583	29,153	58,747	119,763
TOTAL ...	32,441	17,334	73,570	44,463	96,566	264,374

625. The number of water taps installed on these pipe lines is:

Years	*1961*	*1962*	*1963*	*1964*	*1965*	*Total*
No. of taps ...	105	101	156	185	302	849

Demonstration Plots

626. The demonstration farms were maintained and used for extension purposes.

Livestock Breeding Centres

627. Sales to farmers from the six centres compared with previous years were as follows:

Year	*Dairy Cattle*		*Pigs*		
	Adult Female	*Young Male*	*Adult Female*	*Young Female*	*Young Male*
1958 ...	1	1	—	—	13
1959 ...	7	3	—	5	35
1960 ...	39	61	6	74	135
1961 ...	38	66	1	178	220
1962 ...	34	65	22	341	329
1963 ...	37	98	6	314	315
1964 ...	47	92	14	277	284
1965 ...	43	63		176	211

628. The number and distribution of the Government Dairy herd at the end of the year were as follows:

Centre	Dairy Cattle				Total
	Adults		Young		
	M	F	M	F	
Oyster Bay	1	9	5	25	40
Malabar	1	15	—	45	61
Le Chou	1	45	8	19	73
St Gabriel	1	48	10	18	77
Maréchal A.T.F. ...	1	36	10	36	83
Baie Topaze	1	19	—	21	41
Latanier	—	—	—	2	2
Trois Soleils	—	—	—	8	8
Palisade	—	—	—	9	9
Montagne Goyave ...	—	—	—	14	14
La Ferme	—	1	—	1	2
Mangue	—	—	2	—	2
Pointe Brûlé	—	—	—	2	2
Ile Michel	—	—	1	10	11
Caverne	—	—	—	4	4
Anse Gœland ...	—	—	—	6	6
Pointe Coton	2	16	—	2	20
Baie Malgache ...	—	—	1	14	15
Bassin Bœuf	—	—	—	12	12
TOTAL ...	8	189	37	248	482

629. The rearing and breeding records for the dairy cows were as follows:

	No. of Calvings			Bought in from farmers			Death and Culls				Slaughter	
				Adult	Young		Adults		Young			
		M	F	F	M	F	M	F	M	F	F	M
Oyster Bay ...	16	5	11	2	8	12	—	—	2	—	1	—
Malabar ...	21	7	14	5	2	4	—	2	2	4	2	1
Le Chou ...	32	21	11	—	1	3	—	1	3	1	1	—
St. Gabriel ...	34	16	18	1	3	5	—	3	1	—	2	—
Marechal ...	29	13	16	—	1	3	—	2	4	3	—	1
Baie Topaze ...	—	—	—	—	1	1	—	2	—	1	1	—
Pte. Coton ...	5	2	3	—	—	—	1	—	—	—	—	—
TOTAL ...	137	64	73	8	16	28	1	10	12	9	7	2

630. The number and distribution of pigs were as follows:

Place	Adult		Young		Total
	Male	Female	Male	Female	
Oyster Bay	1	7	17	12	37
Le Chou	1	9	8	15	33
St Gabriel	2	19	4	14	39
Maréchal	1	13	21	39	74
Baie Topaze	3	14	22	19	58
Latanier	—	—	—	3	3
Pte Brûlé	—	3	1	—	4
La Ferme	—	1	3	5	9
Mangues	1	—	7	9	17
Trois Soleils	—	8	1	1	10
Baie Malgache	—	6	1	—	7
Ile Michel	—	3	2	6	11
TOTAL	9	83	87	123	302

631. The rearing and breeding records for the pigs were as follows:

Place	No of farrowings	Born		Died or Culled				Slaughtered
				Adults		Young		Adult
		M.	F.	M.	F.	M.	F.	F
Oyster Bay	20	85	63	2	3	16	11	1
Le Chou	6	16	15	—	—	2	6	3
St. Gabriel	24	86	70	2	2	23	20	3
Maréchal	10	26	36	2	—	3	1	3
Baie Topaze	27	90	70	—	—	17	7	—
Pte Brûlé	1	2	4	—	—	—	—	—
Ile Michel	1	2	6	—	—	—	—	—
Trois Soleils	3	10	11	—	—	—	—	—
Baie Malgache	5	18	13	—	—	—	—	—
TOTAL	97	335	288	6	5	61	45	10

632. The average size of litter was 6.4 piglets per farrowing and there was an 82 per cent survival to weaning.

633. Pure bred Berkshire boars and sows were imported from the United Kingdom.

634. The number and distribution of sheep were as follows:

Place	Adults		Young		Total
	Male	Female	Male	Female	
Gombrani	3	20	9	15	47
Ilot Chat	—	—	9	28	37
Ilot Crabe	8	13	7	2	30
TOTAL	11	33	25	45	114

635. The breeding and rearing statistics were as follows:

Place	Lambings	Born		Sold for breeding				Deaths			
				Adults		Young		Adults		Young	
		M	F	M	F	M	F	M	F	M	F
Gombrani ...	30	24	18	—	5	5	2	2	3	—	—
Ilot Chat ...	6	3	3	2	—	7	—	—	—	1	3
Ilot Crabe ...	3	4	1	—	—	—	—	—	—	—	—
TOTAL ...	39	31	22	2	5	12	2	2	3	1	3

636. An average of 1.4 lambs per lambing was obtained. It is proposed to increase stocking up to 100 breeding ewes when the islands should be adequately stocked.

LAGOON ISLANDS

637. Altogether there were approximately 5,000 coconut trees mainly Malayan Dwarf planted on the islands of Coco, Sable, Crabe, Gombrani, Plat and Chat. About 20 palms were destroyed by fire on Ilot Coco. The 600 coconut trees of Ceylon type planted on Ilot Chat in 1959-60 flowered and have set fruit.

638. The sheep on all the islands have done well and numbers increased from 78 to 114 head. About 20 tons of acacia seed were harvested on the islands.

Cattle Walk

639. The cattle census was taken in March as usual.

Year	*Bulls*	*Bullocks*	*Cows*	*Calves*	*Total*
1961 ...	793	260	3,354	1,537	5,444
1962 ...	696	281	2,890	955	4,822
1963 ...	764	234	2,585	978	4,561
1964 ...	—	—	—	—	—
1965 ...	643	235	2,266	1,095	4,239

This table shows the numbers of herd cattle on free range grazing the cattle walk.

Fishing

640. Demonstrations of gill-net fishing and shark fishing were made around the island. Both proved popular; two seine fishermen surrendered their old nets to have them replaced with gill-nets. A group of four young fishermen also bought four shark lines and have started shark fishing. About 800 lbs of salted shark have been produced from Departmental catches.

Agricultural Training Farm

641. Some three years ago, the necessity of providing an agricultural training farm in Rodrigues was realised. The aim of the project was to give the farmers of to-morrow a thorough practical training in the skills required to operate and manage an arable mixed or dairy farm, of the types being developed in the rehabilitation programme for the island. Such trainees would not only set an example to their neighbours but could be used as a means of improving farming practices, the development of new crops or other projects. The training period was to be three years, during which time they would not only " learn by doing " all farm operations concerned with a mixed arable and/or dairy farm and vegetable plot but would be taught simple carpentry, iron work, masonry, the three R's to enable them to appreciate the value of and keep simple farm accounts and have inculcated into them a spirit of co-operation and self-help. A project was put up to and accepted by the United Kingdom Committee of the Freedom From Hunger Campaign. The Committee agreed to meet part of the capital and recurrent costs of the project for the first few years. It was decided to ask the Roman Catholic Church if it could assist in staffing the farm. This task was accepted but, in the event, it proved very difficult to find suitable staff and the project had to be delayed until staff became available.

642. With the arrival of the Revd. Father Harry J. Smith of the Roman Catholic Missionary Society of the Holy Ghost Fathers in Rodrigues in November, 1964, accompanied by Brother Abelard Gross, a start was made on the development of the farm.

643. The farm is situated at Marechal, on the site of a breeding centre which has been absorbed into the training farm. The breeding centre had been in existence for some years and was equipped with a large well-stocked cowbyre and ancillary buildings and yards, a power house with electric generator and processing store, piggeries, calf pens, a water storage tank and water supply, young orchards and arable land for grass, food and cash crop production. The acreage of the breeding centre was extended to provide a suitable site for the presbytery, dormitories, class-cum-recreation rooms, kitchen, etc.

644. Construction began on the presbytery on the 26th November, 1964. In January, work began on the construction of the first dormitory. Each dormitory unit will sleep 16-18 boys with the necessary ablution facilities and a day room where classes are held, meals are taken and recreation enjoyed. The sleeping accommodation provided comprises a camp type bed with sheets, blankets, pillows, etc. and each boy has his own locker. A central kitchen cooks for all dormitories, of which there will be three by the end of 1966.

645. Concurrently with this development, the Civil Commissioner invited applications for the first year's entrants. The age limit for entry was fixed at 15-16 years. Thirty-eight applications were received. After screening, 14 were accepted with a further two to be selected from a group of four.

646. On the completion of the first dormitory, kitchen and presbytery and the arrival of equipment, it was found possible to open the agricultural training farm on the 26th July. It opened with 18 students, instead of 16, for the reason that the group of four had shown such keeness that it was felt no distinction could be made between them.

647. As was to be expected ,the first few months proved arduous and difficult, as the first group of trainees were completely untrained and there were no experienced trainees to break them into the routine of the farm. The situation will be much easier next year when the second batch of trainees are recruited.

648. A chapel, 80 feet × 20 feet, was built and consecrated on the 28th of October. The second dormitory or house unit was commenced in November. Construction of the latter is being done entirely by the trainees, save for the presence on the job of two paid carpenters and one mason. The trainees were also building their workshop, 40 feet × 15 feet, and a loose box for calves, 30 feet × 18 feet. An eighteen foot sailing boat was acquired to enable the trainees to fish.

649. By the end of the year, it could be stated with confidence that the agricultural training farm had found its feet, the trainees had settled in very well and, although there was a lot yet to be done, an excellent start had been made thanks, in large measure, to the energy and zeal of the Principal, the Revd. Father H. J. Smith ably assisted by Brother A Gross.

XXIV. Lesser Dependencies

650. Four principal groups of islands were concerned, namely Peros of 2,900 arpents, Salomon of 2,000 arpents, Diego Garcia of 6,000 arpents and Agalega of 6,000 arpents. The islands produced copra and yields were low.

651. During the year, it was annouced that the Diego Garcia group of dependencies would be excised from Mauritius and would form the nucleus of the British Indian Ocean Territories.

XXV. Land and Water Resources Survey

652. The United Nations Special Fund Project, a survey of the land and water resources of Mauritius, the executing agency for which was the Food and Agricultural Organisation, became operational on the 4th of January as scheduled. Progress has been very satisfactory.

653. By the end of the year, all experts so far required were on duty. Government had provided all counterpart personnel required save for an Hydrologist through inability to recruit, and a Draughtsman because of an acute shortage of staff.

654. All equipment required by the project was received. Suitable office accommodation was supplied at the headquarters of the Department and by the Ministry of Works.

655. A short term consultant visited the island and made recommendations in regard to water legislation, water administration and organisation. Visiting Consultants also reported on the changing use of forest lands, assessment of forest requirements and proposed future land use policy in the central uplands.

656. Photographic flying was completed in connection with an aerial survey of part of the island. Ground control and the preparation of photomosaics remain to be done.

657. By the close of the year, work was continuing on the first stage of the project, namely the collection and analysis of physical data, evaluation of existing land and water use and hydrologic investigations. Reconnaissances were carried out of numerous potential irrigation developments and water storage sites; some twelve were selected for further study. New stream gauging stations were established for water supply assessments of proposed new irrigation schemes. Groundwater investigations involved the drilling of five wells and boreholes which were test-pumped. Foundation core drilling was done on the dam site of one project, in the south-west of the island, which is being subjected to detailed study. Preliminary assessments were made of potential storage sites in regard to construction and water yields. Agronomic investigations were commenced.

658. Detailed preliminary studies were undertaken of a proposed irrigation land settlement scheme in the south-west of the island. The scheme envisages the construction of a dam in the Chamarel valley, the conveying of the water through a tunnel in the coastal range and the irrigation of some 3,000 arpents of land, presently unirrigated save for a very small area, between Le Morne and Black River. The preliminary feasibility report on this scheme should be available during the first half of 1966.

APPENDICES

A. Staff

(as at 31st December)

Appointment	*Name*	*Remarks*
Director of Agriculture ...	M. D. ffrench-Mullen D.I.C.T.A., A.I.C.T.A.	Returned from leave on 1.11.65
Deputy Directors (2) ...	S. Staub, A.R.C.S.T. (Glas.), A.M.I.Mech.E., Dip. Agric. (Maur.)	
	A. Darné, F.R.C.V.S., Dip. Agric. (Maur.)	

ADMINISTRATIVE AND FINANCE DIVISIONS

Chief Finance Officer ...	L. Allier	
Chief Executive Officer	S. W. Toolsy	

In addition there are:

3 Senior Executive Officers		1 returned from leave on 9.8.65
6 Executive Officers	...	1 on study leave and 1 seconded to Ministry of Health
2 Higher Clerical Officers		
14 Clerical Officers		
1 Senior Stores Officer		
1 Assistant Stores Officer		
2 Stores Assistants		
1 Confidential Assistant		
10 Typist/Stenographers		
1 Librarian		

Agricultural Division

Appointment	*Name*	*Remarks*
Senior Agricultural Officers (3)	B. D. Roy, B.Sc. Agric. (Wales), Dip. Agric. (Maur.)	Went on leave on 29.11.65
	K. Lutchmeenaraidoo, B.Sc. Agric. (R'dg) Dip. Agric. (Maur.)	
	1 vacancy	
Agronomists(4) ...	L. A. Suzor, Dip. Agric. (Maur.)	
	J. Seeyave, A.I.C.T.A. (Trinidad), Dip. Agric. (Maur.)	Went on leave on 30.9.65
	T. M. Narain, B.Sc. Agric. (R'dg)	
	L. R. Brunet, B.Sc. Agric. (R'dg)	
Horticulturist ...	Vacant	
Agricultural Officers (9)	J. Marot	
	I. Fakim, Dip. Agric. (Maur.)	
	M. Sooltangos, Dip. Agric. (Maur.)	Went on study leave on 7.8.65
	D. Lalji	
	H. Choolun, Dip. Agric. (Maur.)	
	S. Bagwant	
	D. Reetoo	
	B. Nundloll	
	S. Y. E. Doomun	
In addition there are:		
	17 Assistant Agricultural Officers	5 vacancies
	18 Overseers	
	3 Agricultural Assistants	

Agricultural Chemistry Division

Chemist	S. Belcourt, B.Sc. (Wales), Dip. Agric. (Maur.)	
Assistant Chemist ...	J. Pablot, B.Sc. (Lond.)	
In addition there are:		
	3 Scientific Assistants ...	2 vacancies

Appointment	*Name*	*Remarks*
	PLANT PATHOLOGY DIVISION	
Plant Pathologist ...	L. Orieux, B.Sc. (Lond.), D.I.C.	
Assistant Plant Pathologist	S. Félix, Dip. Agric. (Maur.)	
In addition there are:		
	4 Quarantine Inspectors ...	1 returned from leave on 8.11.65 1 vacancy
	2 Scientific Assistants ...	1 on study leave
	CONTROL BOARD DIVISION	
Registrar	P. J. Galea, Dip. Agric. (Maur.)	Returned from leave on 7.6.65
Assistant Registrar and Chief Chemist	Vacant	
Accountant ...	P. G. Gnany, A.A., C.C.A.	Returned from
Senior Assistant Chemist	I. D. Nawoor, B.Sc. (Hons.) Chemistry (Wales)	leave on 8.9.65
Assistant Chemist ...	R. Thélemaque, Dip. Agric. (Maur.)	
In addition there are:		
	2 Investigational Officers and Weighbridge Inspectors	1 vacancy
	3 Senior Test Chemists ...	1 is on study leave
	24 Test Chemists ...	6 vacancies
	1 Test Chemist ...	Employed during crop only
	25 Samplers	Employed during crop only
	AGRICULTURAL COLLEGE DIVISION	
Principal ...	E. Limfat, M.Sc., M.S.A.E., A.M.I. AGR.E., B.Sc., A.C.G.I., A.M.I., Chem. E.	
Lecturers (4) ...	R. Latulipe, B.Sc. (Lond.)	Returned from leave on 19.7.65
	R. Burrenchobay, B.Sc. (Edin.)	
	S. Moutia, D. Phil (G.U.), B.Sc. (Hort.), Dip. Agric. Econ. (Oxon), Dip. Agric. (Maur.), F.R.H.S.	Returned from study leave on 13.12.65
	R. D. Beeraj, B.Sc. (Wales)	Appointed on 20.4.65

Appointment	*Name*	*Remarks*
Assistant Lecturers and Laboratory Demonstrators (4) ...	P. Guerandel, Dip. Agric. (Maur.)	
	F. G. Carver, Dip. Agric. (Maur.)	
	S. Boojeedhur, Dip. Agric. (Maur.)	
	A. M. Osman, B.Sc. Agric. (R'dg), Postgrad. D.T.A.	Appointed on 23.8.65
In addition there are 24 part-time Lecturers.		
	ENGINEERING DIVISION	
Agricultural Engineer ...	L. Li Pi Shan, B.Sc. (Sask).	Appointed on 2.8.65
Assistant Agricultural Engineer	M. Morad, Dip. Agric. (Maur.)	Went on leave on 11.12.65
In addition there are:		
	1 Scientific Assistant ...	Vacant
	1 Supervisor, Livestock Feed Factory	
	1 Accounts Clerk	
	1 Temporary Clerk, Extension Shop	
	ENTOMOLOGICAL DIVISION	
Entomologist ..	J.E.A.Orian, Ph.D.D.I.C., B.Sc., F.R.E.S., F.Z.S., Dip. Agric (Maur.) A.C.R.	Returned from study leave on 12.4.65
Assistant Entomologist ...	J. Monty, Dip. Agric. (Maur.)	
In addition there is:		
	1 Scientific Assistant ...	On study leave (J. Fon Sing—Temporary)
	DIVISION OF VETERINARY SERVICES	
Senior Veterinary Officer	J. U. D. Shuja, M.R.C.V.S.	
Veterinary Officers (2) ...	D. Korner, Dr. Med. Vet. (Hanover)	Went on leave on 28.12.65 prior to termination of contract
	D. A. Mac Pherson, B.Sc., M.R.C.V.S.	On contract

Appointment	*Name*	*Remarks*
Animal Husbandry Officer	J. A. C. Delaitre, B.Agric. (N.Z.) Animal Husbandry	
Laboratory Technologist	Vacant	F. Nadeau acting
Senior Stock Inspectors (2)	H. J. Avice	
	R. Pascal	
Agricultural Officers (2)	Clifford Gassin, N.D.P.H.	Went on study leave on 2.10.65 Y Aumjaud acting
	Amand Ferrière	
In addition there are:		
	2 Scientific Assistants ...	1 vacancy
	9 Stock Inspectors ...	4 vacancies
	21 Livestock Assistants	
	3 Agricultural Assistants	
	2 Overseers	
	TEA DIVISION	
Senior Agricultural Officer	D. N. Andrews ...	On contract; returned from leave on 31.10.65
Agronomists (2)	L. Moorlee, Dip. Agric. (Maur.)	
	1 Vacancy	
Agricultural Officers (3)	C. S. Amide, Dip. Agic.) (Maur.)	
	J. H. R. Julien, B.Sc. (R'dg)	
	1 Vacancy	
In addition there are:		
	5 Assistant Agricultural Officers	3 vacancies
	10 Overseers	2 vacancies
	1 Agricultural Assistant	
	FISHERIES DIVISION	
Fisheries Officer ...	J. D. Ardill, B.Sc. (Zoology) St. And.	Appointed on 23.6.65
Chief Inspector ...	J. Momplé	
In addition there are:		
	3 Inspectors	
	3 Sub-Inspectors	
	16 Head Guards	
	36 Guards	3 vacancies

RODRIGUES DIVISION

Senior Agricultural Officer	P. L. Hotchin, O.B.E., B.Sc. Agric. (Leeds), D.T.A. (Trinidad)	
Agricultural Officer ...	E. Farla	
In addition there are:		
	2 Assistant Agricultural Officers	1 vacancy
	16 Overseers	
	1 Executive Officer	
	1 Clerical Officer	
	1 Assistant Stores Officer	
	1 Stores Assistant	
	5 Clerical Assistants	

Messrs. J. E. A. Orian and S. Moutia are to be congratulated on having acquired, as a result of the award of commonwealth scholarships, a Ph.D. and D. Phil (G.U.) respectively.

Dr. Orian's thesis was on the Hemiptera of Mauritius which the examiners recommended should be published. On the 5th April he was admitted to the Degree of Doctor of Philosophy in the Faculty of Science of the University of London. He also had conferred on him the Diploma of Membership of the Imperial College (D.I.C.).

Dr. Moutia's thesis was on The Effect of Growth Substances and Gilberellic Acid on Tea *(Camelia Sinensis)* (L) O. Kuntze. He was awarded a Degree of Doctor of Philosophy (Agriculture) of the University of Gauhati, Assam.

B. Composition of the Principal Boards and Committees

(i) BOARD OF AGRICULTURE, FISHERIES AND NATURAL RESOURCES

Ex-Officio Members

The Director of Agriculture—*Chairman*
The Conservator of Forests—*Vice-Chairman*
The Deputy Financial Secretary

Members of the Legislative Assembly

Dr. the Honourable L. R. Chaperon
The Honourable R. Rey
The Honourable V. Govinden, M.B.E.
The Honourable H. R. K. Abdool

Representatives of Millers

Mr. Serge Dupont de Rivaltz de St. Antoine
Dr. P. O. Wiehe, C.B.E.

Representatives of Planters

Mr. Roland Ducler des Rauches
Mr. Ramnarain Hurday

Representative of the Chamber of Agriculture

Mr. L. H. Garthwaite

There was 1 meeting of the Board during the year.

(ii) Agricultural College Advisory Board

The Director of Agriculture—*Chairman*

Nominated by His Excellency the Governor

The Honourable R. Balgobin, M.L.A.
Mrs. B. Jhowry
Dr. P. O. Wiehe, C.B.E.

Nominated by the Chamber of Agriculture

Sir André Nairac, Kt., C.B.E., Q.C.
Mr. Serge Dupont de Rivaltz de St. Antoine

Nominated by the Société de Technologie Agricole et Sucrière

Mr. Robert Antoine
Mr. Auguste Harel

Nominated by the Association of Former Agricultural Students

Mr. René Noel

The Board held 1 meeting during the year.

(iii) Arbitration and Control Board

Mr. Magistrate S. Mootoosamy—*Chairman*

Representatives of Millers

Mr. Ernest Bouvet
Mr. Philippe d'Arifat

Representatives of Large Planters

Mr. Roland Ducler des Rauches
Mr. Balkrishna Ramphul

Representatives of Small Planters

Mr. Nunkeesor Saddul
Mr. Jagdeosing Chundunsing

The Board held 22 meetings during the year.

(iv) Tobacco Board

Ex-Officio Members

The Director of Agriculture or any officer of his Department deputed by him—*Chairman*
The Commissioner of Excise—*Vice-Chairman*
The Accountant General or any officer of his Department deputed by him
The Manager, Tobacco Warehouse

Appointed by His Excellency the Governor on the advice of the Minister

The General Manager of the British American Tobacco Co. (Mauritius) Ltd., or his representative

The Managing Director of the Amalgamated Tobacco Corporation (Mauritius) Ltd., or his representative

Mr. A. G. Rey

Mr. P. Jheelan

Mr. R. Ducler des Rauches

Mr. A. Purgass

The Board held 15 meetings during the year.

(v) Land Settlement Advisory Committee

The Director of Agriculture or his representative—*Chairman*

The Senior Agricultural Officer (Extension)

The Registrar of Co-operative Societies

The Civil Commissioner (North)

The Civil Commissioner (South)

The Civil Commissioner (Moka/Flacq)

The Civil Commissioner (Plaines Wilhems/Black River)

The Honourable Vèle Govinden, M.B.E., M.L.A.

Mr. R. Hurday

Mr. Hurruck Hoolsy

The Committee held 1 meeting during the year.

(vi) Tea Control Board

Ex-Officio Members

The Director of Agriculture—*Chairman*

The Deputy Financial Secretary

Members appointed by His Excellency the Governor

Mr. P. Boullé

Mr. J. Pilot

Mr. L. Ramdin

Mr. A. H. Maderbocus

Mr. B. Ramsahaye

The Honourable V. Govinden, M.B.E., M.L.A.

The Honourable Y. Ramjan, M.L.A.

Mr. Francis North Coombes

The Board held 11 meetings during the year.

(vii) Sugar Planters' Rehabilitation Fund Committee

Ex-Officio Members

The Director of Agriculture—*Chairman*

The Registrar of Co-operative Societies

Members appointed by His Excellency the Governor

Mr. C. Dwarkasingh
Mr. J. Lagesse
Mr. S. Butan
Mr. J. Roodurmun
Mr. G. Rouillard

The Board held 17 meetings during the year.

C. Legislation

Proclamation No. 11 of 1965 ...	To proclaim the rate of duty leviable under the Sale of Canes (Control) Ordinance, 1964, on the sugars of the 1964 crop exported from Mauritius
Ordinance No. 1 of 1965 ...	The Cyclone and Drought Insurance Fund (Amendment) Ordinance, 1965.
Ordinance No. 15 of 1965 ...	The Mauritius Agricultural Marketing Ordinance, 1965.
Ordinance No. 28 of 1965 ...	The Cyclone and Drought Insurance Fund (Amendment No. 2) Ordinance, 1965.
Ordinance No. 32 of 1965 ...	The Sugar Cane Plantations (Control) (Amendment) Ordinance, 1965.
Ordinance No. 33 of 1965 ...	The Forest, Mountain and River Reserves (Amendment) Ordinance, 1965.
Government Notice No. 6 of 1965 ...	The Mauritius Agricultural Marketing Ordinance, 1963.
Government Notice No. 8 of 1965 ...	The Mauritius Agricultural Marketing Ordinance.
Government Notice No. 62 of 1965 ...	The Civil Establishment Ordinance, 1954.
Government Notice No. 96 of 1965 ...	The Public Health Ordinance.
Government Notice No. 97 of 1965 ...	The Mauritius Agricultural Marketing Ordinance, 1963.
Government Notice No. 98 of 1965 ...	The Mauritius Agricultural Marketing Ordinance, 1963.
Government Notice No. 110 of 1965 ...	The Pensions Ordinance, 1951.
Government Notice No. 117 of 1965 ...	The Public Health Ordinance.
Government Notice No. 118 of 1965 ...	The Civil Establishment Ordinance, 1954.

D. List of Publications and Contributions to Literature by Officers of the Department of Agriculture during 1965

Name of Author	*Title of Paper*	*Name, Volume No., Page Nos. of periodical in which published*
Félix, S. ... ... Lallmahomed, G. M. and Orieux, L	Eggplant wilt, *Diaporthe Vexans* (Saccard & Sydow) Gratz in Mauritius	Revue Agricole et Sucrière de l'Ile Maurice, Vol. 44, Juillet-Sept., 1965, No. 3 pp, 182-186
Department of Agriculture	Annual Report	1963
Department of Agriculture	Annual Report	1964
Department of Agriculture	The cultivation of bean in Mauritius	Bulletin No. 96, September, 1965
Orieux, L.	Le contrôle phyto-sanitaire des Importations	Revue Agricole et Sucrière de l'Ile Maurice, 1965, Vol. 44, No. 3 pp 44-48
Orian, J. E. A.	The morphology of the male genitalia of *Abricta ferruginosa* (Stal) (Homoptera : Cicadidæ)—*Proc. R. Ent. Soc. Lond.* (A) 1964 *39* : 1-4, 4 figs.	
Orian, J. E. A.	A new genus of Pentatomidæ from Africa, Madagascar and Mauritius (Hemiptera) *Proc. R. Ent. Soc. Lond.* (B) 1965 *34* : 25-30, 5 figs., 3 pls.	
Orian, J. E. A.	Pest control recommendations made by the division of entomology (2nd edition) (in preparation).	
Orian, J. E. A.	Citrus pests and their control (in preparation).	
Orian, J. E. A.	A review of Biological Control of insects and weeds in Mauritius (in preparation) at the request of the Commonwealth Institute of Biological Control.	

E. Richelieu Livestock Feed Factory

STATEMENT OF REVENUE AND EXPENDITURE FOR THE YEAR ENDED 30TH JUNE, 1965

EXPENDITURE	Rs c	Rs c
Stock of Materials on 1.7.1964 :		
Raw Materials	660,643.84	
Manufactured Feeds	15,697.30	
Aloe Bags	4,722.05	
		681,063.19
Raw materials received in 63–64 but paid in 64–65 :		
Fish Meal		51,049.04
		630,014,15
Purchase of Raw Materials and bags in 1964–65:		
Maize	750,755.18	
Wheat Bran	158,511.47	
Beef fat	6,306.62	
Bone Meal	18,348.25	
Groundnut Cakes	83,013.39	
Meat Meal	163,155.34	
Fish Meal	112,913.56	
Molasses	53,571.81	
Milk Powder	31,243.80	
Colonial salt	3,964.80	
Rice	2,110.00	
Pollard	82,141.33	
Cotton Seed Cakes	103,946.26	
Lucerne	71,038 04	
Antibiotica	518,00	
Vitamins	18,120,17	
Wheaten Flour	3,615.00	
Oats	71,949.80	
Baled Bagasse	870,76	
Scums	694,20	
Aloe bags and yarn	90,235.75	
Diesel Oil	5,773.00	
		1,832,796,53
Other Expenses		
Wages	106,613.69	
Transport	1,084.64	
Office Expenses	83,33	
Electricity	10,571.75	
Insurance	1,933.50	
Maintenance of Machinery	16,845.88	
Rent of Extension Shop	2,400.00	
		139,532.79
		2,602,343.47

REVENUE	Rs c	Rs c
Sales of Feeds		2,069,019.78
Stock of Materials on 30.6.65 :		
Raw Materials	327,436.93	
Manufactured feeds	18,264.70	
Aloe Bags	20,193.11	
		365,894.74
Excess of Expenditure over Revenue :		167,428.95
		2,602,343.47

F. Conversion Table

1 Arpent	...	1.043	acres
1 Gaulette	...	10.61	feet
1 Metric Ton	...	1,000	kilos
1 Long Ton	...	1,016	kilos
1 Pound avoirdupois	...	454	grams
1 Kilo	...	1,000	grams
1 Hundredweight	...	50.803	kilos
1 Cord	...	92.82	cubic feet
1 Imperial Gallon	...	4.54	litres
1 Rupee	...	1/6	Sterling

7540/2/67—900